Arizona Department of Transportation
Intermodal Transportation Division
Environmental Planning Group
205 South 17th Avenue
Phoenix, Arizona 85007

Draft Environmental Assessment

for

MARYLAND AVENUE OVERPASS AT 55TH AVENUE AND GRAND AVENUE (US 60)

Maricopa County, Arizona
TRACS No. 060 MA 153 H5601 01C
Project No. STP-060-B(007)

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On: Aug 14, 2002

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Division Administrator
Federal Highway Administration
On: Aug. 20, 2002

This environmental assessment has been prepared in accordance with provisions and requirements of Chapter 1, Title 23 USC, 23 CFR Part 771, relating to the implementation of the National Environmental Policy Act of 1969.

LIST OF TABLES

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AASHTO	American Association of State Highway and Transportation Officials
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ADT	Average Daily Traffic
APS	Arizona Public Service
ASC	Alternative Selection Committee
BNSF	Burlington Northern Santa Fe Railway
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dBA	Logarithmic unit of sound on a meter's A-Scale that approximates frequency responses
EA	Environmental Assessment
ED	Enumeration District
EPA	United States Environmental Protection Agency
EPG	Environmental Planning Group
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
LOS	Level of Service
MAG	Maricopa Association of Governments
MIS	Major Investment Study
mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NAC	Noise Activity Category
NAP	Noise Abatement Policy
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NOI	Notice of Intent
NOT	Notice of Termination
O_3	Ozone
PA	Programmatic Agreement
PIP	Public Involvement Plan
PISA	Preliminary Initial Site Assessment
PM_{10}	Particulate Matter
PPM	Parts Per Million
ROW	Right-of-Way
RPTA	Regional Public Transportation Authority
SHPO	State Historic Preservation Office
SRP	Salt River Project
SWPPP	Storm Water Pollution Prevention Plan
TCP	Traditional Cultural Place
U.S.	United States
vpd	vehicles per day

The following mitigation measures and commitments are not subject to change without the prior written approval from the Federal Highway Administration.

Arizona Department of Transportation Environmental Planning Group Responsibilities:

1. The results of the Phase I Site Assessment for hazardous materials would be evaluated by the Arizona Department of Transportation Environmental Planning Group and mitigated prior to construction. (Refer to Page 52.)

Arizona Department of Transportation Design Responsibilities:

1. The Arizona Department of Transportation would coordinate with Regional Public Transportation Authority to address impacts and/or relocation of any temporarily or permanently impacted bus stops or bus routes. (Refer to Page 29.)

2. The Arizona Department of Transportation would coordinate with the Burlington Northern Santa Fe Railway during the development of the traffic control plan. (Refer to Page 29.)

3. The Arizona Department of Transportation would evaluate maintaining outside shoulder widths to accommodate the future striping of bike lanes along the Maryland Avenue grade-separation structure or would evaluate an alternative location to accommodate these uses during final design. (Refer to Page 32.)

4. The Arizona Department of Transportation would construct an eight-foot high sound barrier as identified in sound barrier alternatives B-1, B-2, or B-3 or a combination of these alternative recommendations. The Arizona Department of Transportation would coordinate with the City of Glendale and evaluate final specifications and design criteria prior to 95 percent final design. (Refer to Page 47.)

5. The Storm Water Pollution Prevention Plan would be prepared during final design. (Refer to Page 51.)

Arizona Department of Transportation Roadside Development Section Responsibilities:

1. All embankment slopes, detention basins, and affected public right-of-way would be landscaped with drought tolerant plants and the area covered with an inert ground cover. Trees would be planted along detention basins to screen the facilities from motorists' views. (Refer to Page 50.)

Arizona Department of Transportation District Construction Responsibilities:

1. The District Construction Office would notify the public prior to any temporary access impacts to pedestrians or motorists. Final details of any traffic or pedestrian restrictions would be evaluated during final design. (Refer to Page 32.)

2. The District Construction Office would coordinate with bus transportation representatives from the Isaac E. Imes Magnet School to minimize construction-related impacts on bus access to and from the school and/or develop alternate routes to use as necessary. (Refer to Page 32.)

3. The District Construction Office would coordinate with the Maricopa County Environmental Services Department during the planning of night-time road closures or detours during winter months for air quality purposes. (Refer to Page 43.)

4. Because 5 or more acres of land would be disturbed, a National Pollutant Discharge Elimination System permit would be required. The District Construction Office would submit the Notice of Intent and the Notice of Termination to the United States Environmental Protection Agency and copies to the Arizona Department of Environmental Quality. (Refer to Page 51.)

5. The District Construction Office would provide notice to utility companies prior to any disruption of service. (Refer to Page 53.)

Contractor's Responsibilities:

1. No full traffic closures would be permitted between Thanksgiving Day and January 1st. (Refer to Page 32.)

2. Any full closures along Grand Avenue, 55th Avenue, and Maryland Avenue would occur at night or during weekend hours. (Refer to Page 32.)

3. The contractor would adhere to Maricopa Rules 310 and 360 regarding fugitive dust emissions and new source performance standards, respectively, during construction. (Refer to Page 43.)

4. The contractor would be responsible for obtaining any necessary asbestos permits for demolition of any structures done by the contractor. (Refer to Page 43.)

5. In compliance with Executive Order 13112 regarding invasive species, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity. (Refer to Page 50.)

6. In order to prevent the introduction of invasive species, all earth-moving and hauling equipment would be washed prior to arriving on site to prevent the introduction of invasive species seed. (Refer to Page 50.)

7. Because 5 or more acres of land would be disturbed, a National Pollutant Discharge Elimination System permit would be required. The contractor would submit the Notice of Intent and the Notice of Termination to the United States Environmental Protection Agency and copies to the Arizona Department of Environmental Quality. (Refer to Page 51.)

Standard Specifications Included as Mitigation Measures:

1. According to *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction*, Section 107 Legal Relations and Responsibility to Public (2000 Edition) (Stored Specification 107.05 Archaeological Features) if previously unidentified cultural resources are encountered during activity related to the construction of the project, the contractor would stop work immediately at that location and take all reasonable steps to secure the preservation of those resources and notify the Arizona Department of Transportation Engineer. The Engineer would contact the Environmental Planning Group immediately and make arrangements for the proper treatment of those resources. Arizona Department of Transportation would, in turn, notify the appropriate agency(ies) to evaluate the significance of the resource. (Refer to Page 40.)

2. During construction, care would be taken to ensure that construction materials would comply in accordance with *Arizona Department of Transportation Standard Specifications for Road and Bridge Construction Section 104.09* (2000 edition). Excess concrete, curing agents, formwork, loose embankment materials, and fuel would not be disposed of within the project boundaries. (Refer to Page 51.)

3. According to *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction*, Section 107 Legal Relations and Responsibility to Public (2000 Edition) (Stored Specification 107HAZMT, 01/15/93), if previously unidentified or suspected hazardous materials are encountered during construction, work would cease at that location and the Arizona Department of Transportation Engineer would be contacted to arrange for proper assessment, treatment, or disposal of those materials. Such locations would be investigated and proper action implemented prior to the continuation of work in that location. (Refer to Page 52.)

4. Excess waste material and construction debris would be disposed of at sites supplied by the contractor in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction* Section 107.11, Protection and Restoration of Property and Landscape (2000 Edition). Disposal would be made at either municipal landfills approved under Title D of the Resource Conservation and Recovery Act, construction debris landfills approved under Article 3 of the Arizona Revised Statutes 49-241 (Aquifer Protection Permit) administered by the Arizona Department of Environmental Quality, or inert landfills. (Refer to Page 53.)

5. During construction, the contractor would give special attention to the effect of its operations upon the landscape in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction,* Section 104.09 (2000 Edition) and the Water Quality Standards in Title 18, Chapter 11 of the Arizona Administrative Code as administered by the Arizona Department of Environmental Quality. (Refer to Page 53.)

6. Any material sources required for this project outside of the project area would be examined for environmental effects, by the contractor, prior to use, through a separate environmental analysis in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction,* Section 1001 Material Sources (2000 Edition) (Stored Specification 1001.2 General). (Refer to Page 54.)

I. INTRODUCTION

A. Explanation of Environmental Assessment

This Environmental Assessment (EA) is being prepared to comply with the National Environmental Policy Act (NEPA) of 1969 and the policies of the Federal Highway Administration (FHWA), as the lead federal agency. The EA process provides steps and procedures to evaluate the potential social, economic, and environmental impacts of a proposed action while providing an opportunity for public and local, state, or other federal cooperating agencies to provide input and/or comment through scoping, public information meetings, and a public hearing. These social, economic, and environmental considerations are evaluated and measured, as defined in the Council on Environmental Quality's (CEQ) regulations, by their magnitude of impacts. In addition, this EA also provides FHWA and the Arizona Department of Transportation (ADOT) a detailed analysis to better examine and consider the level of impacts on any sensitive social, economic, and environmental resources and assists in their decision-making process.

B. Location

The proposed project is located at the Maryland Avenue, 55th Avenue, and Grand Avenue intersection within the City of Glendale, Maricopa County, Arizona (refer to Figures 1, 2, and 3). Within the Phoenix Metropolitan Area this portion of United States 60 (US 60) is designated as Grand Avenue. Typically, arterial streets within the metropolitan area intersect from north-south and east-west directions, which result in a standard four-legged intersection. Grand Avenue aligns on a northwest to southeast direction. This alignment of Grand Avenue creates six-legged intersections as it intersects main north-to-south and east-to-west arterial streets (refer to Figure 3). An arterial can be defined as a major transportation route/street within the metropolitan area.

C. Background and Overview

Grand Avenue was originally built to link the agricultural lands in the western portion of Maricopa County and their associated growing communities, to downtown Phoenix and the State Capitol Building. Grand Avenue has undergone a series of studies by state and local agencies over the past two decades to identify and examine a range of improvement alternatives. The previous studies included eliminating Grand Avenue altogether and reconstructing it as an expressway.

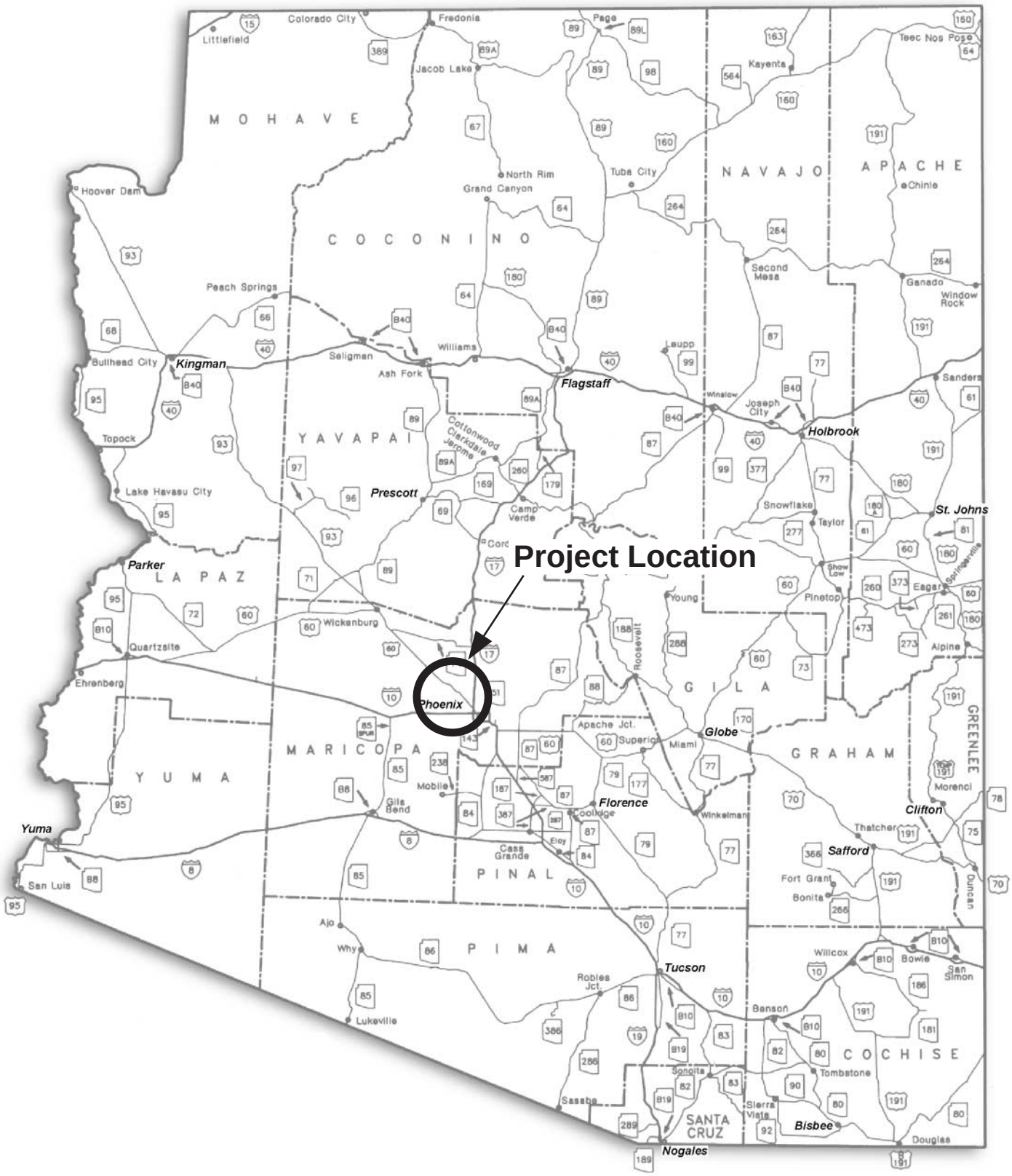
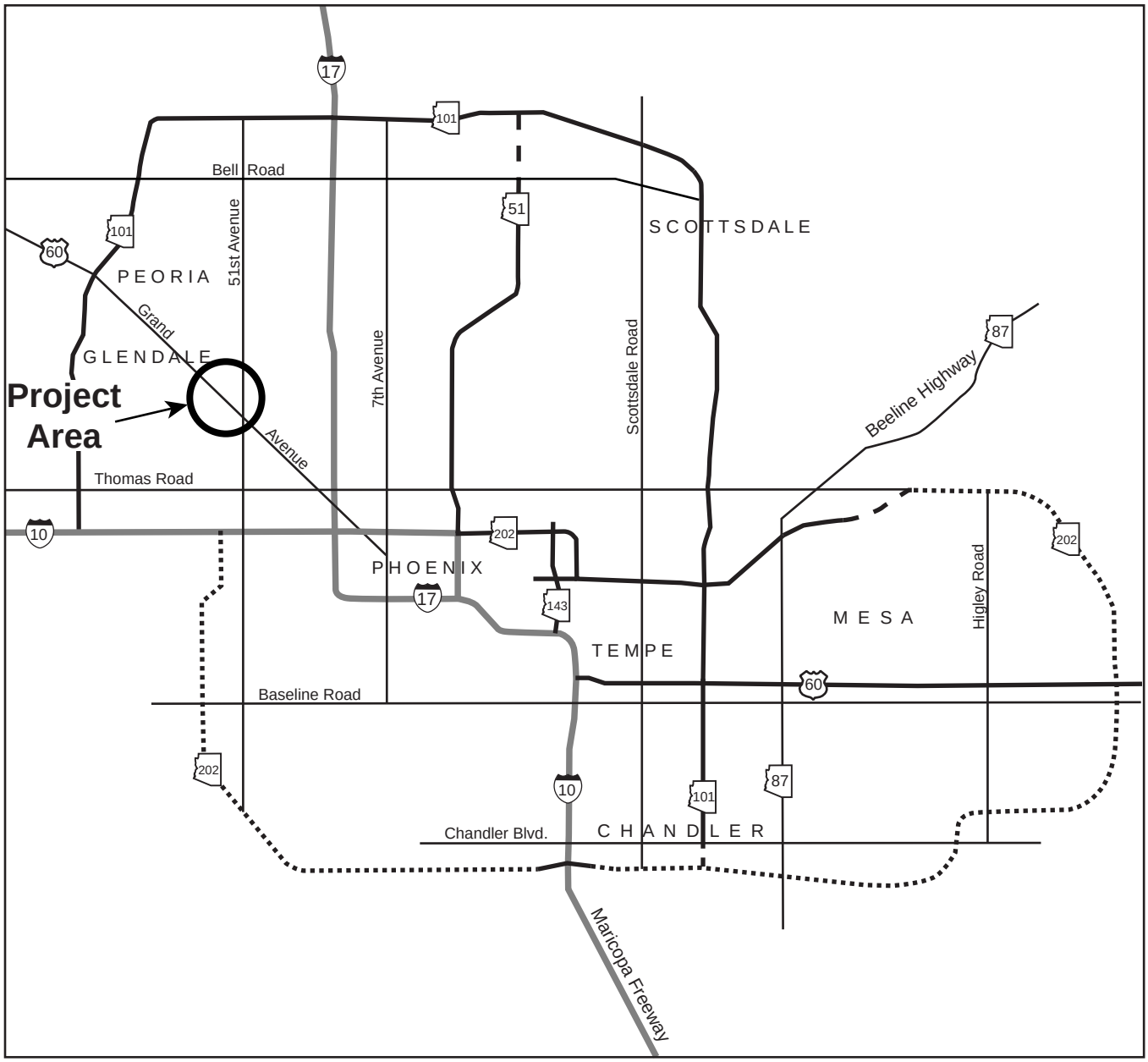


Figure 1. State Location Map



Key

- Built/Existing Freeways
- Freeways Under Construction
- Planned Freeways

Miles

0 5 10

NORTH

Figure 2. Project Vicinity

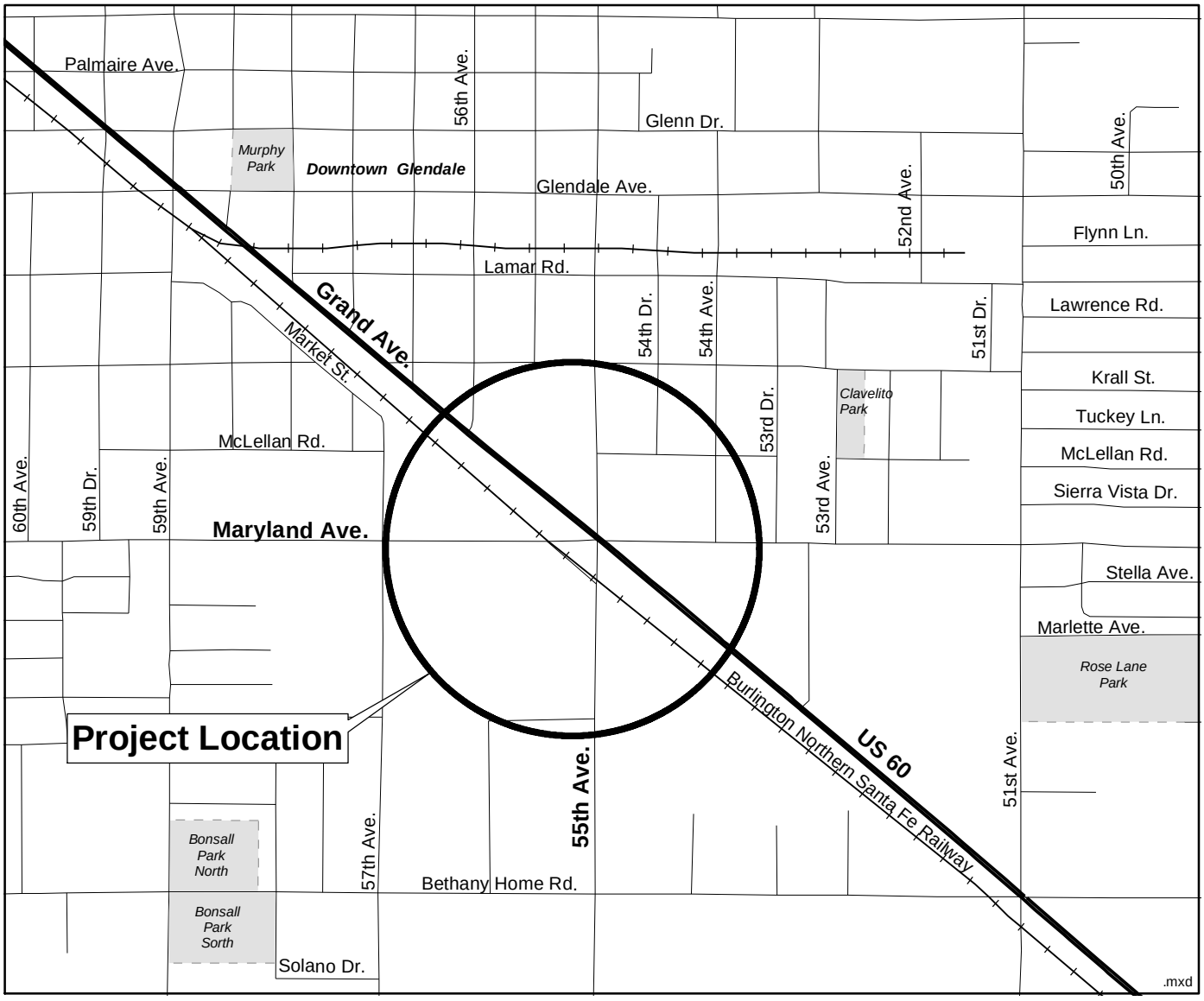


Figure 3. Project Location

In 1985, the Maricopa Association of Governments (MAG) completed the *West Area Transportation Analyses*. This report analyzed the option to build a freeway along the corridor and/or build grade-separation structure(s), which would remove one of the roads at each of the six-legged intersection. In 1990, the Interstate 10 (I-10) to Interstate 17 (I-17) connection was completed. This interstate-to-interstate connection reduced some of the through travel on Grand Avenue, but did not resolve all of the traffic operation problems such as delay times during peak-hour travel.

ADOT and MAG followed in 1996 with the *Grand Avenue Corridor Study*, which developed expressway concepts that were characterized and differentiated by their design speeds and levels of traffic service. The Grand Avenue Expressway concept was eliminated from planning by the governor of Arizona and MAG's Regional Council in order to bring program costs in line with the state's expected revenues.

In January 1999, ADOT initiated the *Grand Avenue Major Investment Study* (MIS). This study evaluated and recommended transportation improvements for the Grand Avenue corridor from I-17 to Loop 101, and identified potential environmental impacts. A steering committee comprised of ADOT; Cities of Glendale, Peoria, and Phoenix; MAG; Maricopa County; Regional Public Transportation Authority (RPTA); WESTMARC (a private association for businesses and development in the West Valley); and Burlington Northern Santa Fe Railway (BNSF), was formed as part of the MIS to identify improvement options to the Grand Avenue corridor. In addition, two public meetings and a stakeholders' meeting were held so that ADOT could provide information to the public and provide the public the opportunity to comment. Eight project objectives were identified for evaluation, these included: 1) eliminate six-legged intersections, 2) eliminate railroad crossings, 3) improve regional mobility, 4) promote development opportunities, 5) improve aesthetics of the corridor, 6) serve the statewide function of US 60, 7) promote multi-modal uses in the corridor, and 8) accommodate the projected travel demand in the corridor. The MIS narrowed the project focus to eight locations along Grand Avenue. Two options from the 1996 *Grand Avenue Corridor Study,* which also had a public involvement process, were refined and evaluated in the MIS. These two alternatives were Option 4 - Alternating Grade Separations, and Option 5 - Limited Expressway. Each alternative addressed the eight project objectives, however Option 4 would more effectively address railroad crossings and would be less expensive than Option 5. Therefore, Option 4 was selected as the preferred option from the MIS.

ADOT's objectives for this project are to improve the traffic operations or movements (reduce intersection delay times and eliminate the six-legged intersection), while minimizing environmental impacts, right-of-way (ROW) acquisition, construction costs, and traffic restrictions during construction. The proposed improvements should comply with current ADOT and American Association of State Highway and Transportation Officials (AASHTO) design criteria and guidelines. The proposed improvements should also accommodate future traffic volumes projected for the design year 2025 (the year in which operational capacity and design elements target to improve). In addition, the facility should provide a Level of Service (LOS) of D or better and reduce intersection delay times. LOS is a qualitative measure referring to the degree of congestion or delay experienced by motorists. Levels of service range from A to F, with A being the best quality of traffic flow, and F being the poorest (refer to Table 1 and Figure 4).

Table 1. Level of Service Criteria for Intersections with Traffic Signals

Level of Service	Average Delay per Vehicle (seconds/vehicle)
A	0.0 to 10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

Level of Service A. Free flow at posted speed limit, frequent passing opportunities.

Level of Service D. Sluggish flow, no passing opportunities.

Level of Service B. Relatively free flow, limited passing opportunities.

Level of Service E. Very sluggish flow, reduced travel speeds, no opportunity for passing.

Level of Service C. Relatively free flow, but almost no passing opportunities.

Level of Service F. Heavy congestion, frequent stop and go conditions, no passing opportunities.

Figure 4. Level of Service Classifications

II. PROJECT PURPOSE AND NEED

A. Purpose and Need

Grand Avenue and the adjacent BNSF provide a transportation corridor serving the industrial and commercial businesses in the western Phoenix Metropolitan Area. Grand Avenue also provides through traffic mobility and local access to commercial and retail businesses, and residences along the corridor. The current six-legged intersection formed by Maryland Avenue, 55th Avenue, and Grand Avenue causes delays of existing traffic for approximately three minutes. This results in long delays for motorists during peak travel periods. Additionally, the BNSF tracks that parallel Grand Avenue create additional delays for those motorists traveling along Maryland Avenue and 55th Avenue. In the 2025 design year, traffic volumes are expected to rise resulting in increased traffic delays and congestion at this intersection as well as at other six-legged intersections throughout the Grand Avenue corridor.

The current Maryland Avenue, 55th Avenue, and Grand Avenue intersection operates at LOS F (refer to Table 1). Without traffic movement improvements, the intersection would continue to operate at LOS F in the 2025 design year. Construction of a Maryland Avenue grade separation to eliminate the six-legged intersection would improve the LOS of the remaining traffic intersection. In addition, because a Maryland Avenue grade-separation overpass would also pass over the BNSF, traffic congestion due to train delays would also be reduced. As a result of these intersection improvements, the traffic capacity of the intersection would improve, resulting in reduced congestion and increased regional mobility throughout the Grand Avenue corridor.

Table 2 illustrates 2000 and projected 2025 traffic volumes and LOS classifications if no improvements (No Build Alternative) to the intersection were completed. Traffic volumes are represented by the Average Daily Traffic (ADT) of number of vehicles per day (vpd). The vpd range illustrated in Table 2 reflects that vehicles could choose to turn onto another street such as Maryland Avenue or 55th Avenue, and not necessarily travel through the intersection on that specific street (e.g., traffic on Grand Avenue could turn onto Maryland Avenue or 55th Avenue instead of traveling through the intersection on Grand Avenue).

Table 2. Existing 2000 and Projected 2025 No Build Alternative Traffic Volume and LOS Classifications						
Location	2000			2025 (No Build Alternative)		
	ADT (vpd)[1]	LOS		ADT (vpd)	LOS	
		AM	PM		AM	PM
Grand Avenue	26,000-26,200	F	F	27,300-27,500	F	F
Maryland Avenue	5,700-5,800	F	F	6,800-7,000	F	F
55th Avenue	5,000-6,000	F	F	6,000-7,200	F	F

Source: ADOT 2001. *[1] ADT (vpd) - Average Daily Traffic (vehicles per day)*

B. Conformance with Regulations, Land Use Plans, and Other Plans

The proposed project complies with the City of Glendale's *General Plan* and *Transportation Plan* and MAG's *Long Range Transportation Plan*.

C. General Project Schedule

Final design is planned for completion by the winter of 2002, with acquisition of ROW being completed in spring or summer 2003. Once project-area ROW is acquired, construction would begin, with fall 2003 being the current estimate. The proposed intersection improvements would be open to traffic in 2005.

D. Resource Issues Eliminated From Detailed Study

The following resources were eliminated from further evaluation because it was determined that either these resources did not occur within the proposed project area or did not apply to this specific geographic location: geological setting and mineral resources; 100-year floodplain; ground water; sole source aquifers; waters of the United States (U.S.) under Section 404 of the Clean Water Act; wild and scenic rivers; biological resources or designated critical habitat for federally-listed threatened, endangered, proposed, or candidate species; Arizona Species of Concern; plants under the Arizona Native Plant Law; wetlands; riparian habitat; or National Natural Landmarks.

III. ALTERNATIVES

A. Alternatives Considered and Eliminated From Further Consideration

Build alternatives and a No Build Alternative were evaluated based on public and stakeholder input, and the overall feasibility and operation of the design concepts. The Alternative Selection Committee (ASC) included representatives from the FHWA, ADOT Valley Project Management, ADOT Phoenix Construction District, ADOT ROW Section, ADOT Roadway Section, ADOT Environmental Planning Group (EPG), and the City of Glendale.

Five build alternatives (Alternative N-1, N-2a, S-1, S-2, and N-2b) were developed for the proposed Maryland Avenue overpass. These alternatives were developed and evaluated during ADOT's Design Concept Study. The design criteria for the study included ROW, traffic/operation issues, and total vehicular delay (refer to Table 3). The Design Concept Study included efforts to minimize social, economic, and environmental impacts; ground disturbance; ROW acquisition; construction costs where feasible; and impacts to motorists and pedestrians during construction. The Design Concept Study was used to assist ADOT in the selection of an alternative to carry forward into the next phase of design and this EA.

All alternatives considered using a grade-separation overpass that would carry Maryland Avenue over 55th Avenue, Grand Avenue, and the BNSF. Two 12-foot travel lanes (one in each direction) would be provided across the Maryland Avenue grade-separation overpass. This configuration would maintain the current roadway section. South of the Grand Avenue and Maryland Avenue intersection, 55th Avenue would be disconnected and, as a result, a three-way intersection containing Grand Avenue and the north leg of 55th Avenue would be all that remains. This three-legged intersection formed by Grand Avenue and the north leg of 55th Avenue, as well as 57th Avenue and Maryland Avenue, would be signalized to accommodate turning movements from or into the local neighborhood and/or commercial businesses. Other traffic light locations were evaluated on a case-by-case basis for each specific alternative.

Table 3. Description of Alternatives Eliminated				
	Alternative N-1	**Alternatives N2a**	**Alternative S-1**	**Alternative S-2**
Right-of-Way Required	9.6 (acres)	12 (acres)	21.9 (acres)	27.6 (acres)
Parcels Taken	Commercial—8 Residential—2	Commercial—8 Residential—0	Commercial—2 Residential—0	Commercial—2 Residential—0
Costs (millions)	$16.2	$15.4	$21.6	$21.0
Total Vehicular Delay	a.m.—25 sec/veh[1] p.m.—43 sec/veh	a.m.—26 sec/veh p.m.—47 sec/veh	a.m.—26 sec/veh p.m.—42 sec/veh	a.m.—27 sec/veh p.m.—47 sec/veh
Operational Issues/ Considerations	• One-way connector roads. • Access to local businesses would be modified. • No connection between 55th Avenue and Grand Avenue. • Circuitous (roundabout) and longer travel time.	• Two-way connector roads. • Access to businesses would be provided along two-way connector roads. • Right-turn to and from Grand Avenue and 55th Avenue would be provided.	• One-way connector roads. • Access to local businesses would be modified. • No connection between 55th Avenue and Grand Avenue. • Circuitous (roundabout) and longer travel time.	• Two-way connector roads. • Circuitous (roundabout) access to businesses provided. • No connection between 55th Avenue and Grand Avenue.

Source: ADOT 2001. **[1]sec/veh = seconds per vehicle**

1. No Build Alternative

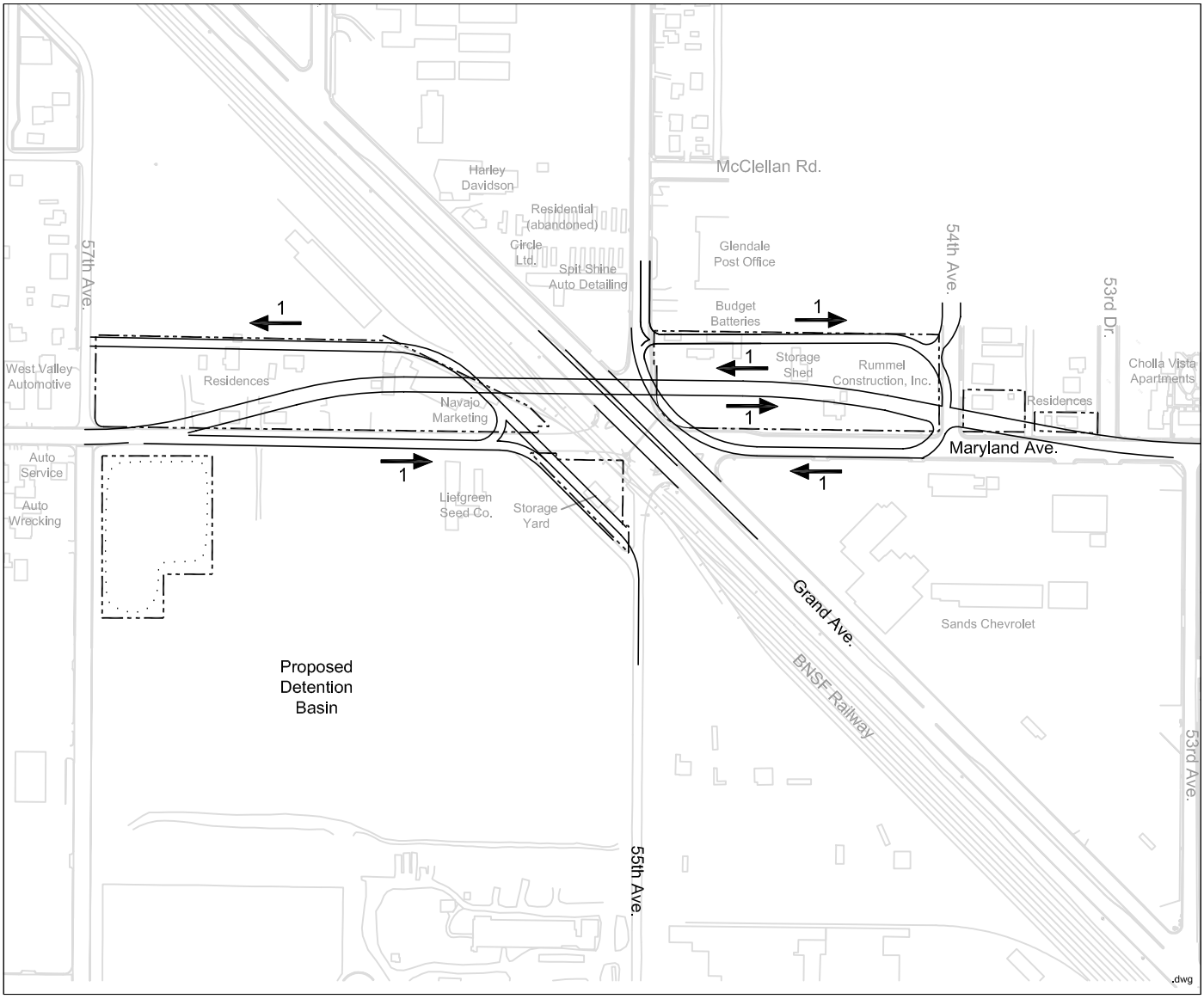
The No Build Alternative would allow for minor improvements and routine maintenance. This alternative proposes no major improvements for Maryland Avenue at the Grand Avenue and 55th Avenue intersection. The intersection would remain as a six-legged intersection. The No Build Alternative would not decrease delay times or eliminate the BNSF at-grade track crossing for Maryland Avenue when compared with current build recommendations. The No Build Alternative does not meet the traffic operational needs for the projected traffic volumes in the year 2025, but is the baseline condition used for comparison to the build alternatives to determine the magnitude of impacts.

2. Build Alternatives

a. Alternative N-1 (northern alignment with one-way connector roads)

Alternative N-1 includes a Maryland Avenue overpass to the north of the existing Maryland Avenue alignment. Two residential properties located between 54th Avenue and 53rd Avenue would be acquired for ROW. In addition, eight commercial properties located west of the 55th Avenue alignment would be acquired. Access to adjoining properties would be obtained from one-way connector roads (refer to Table 3 and Figure 5). Traffic signals would be located at the intersection of Maryland Avenue and 54th Avenue, and also at the Maryland Avenue and 57th Avenue intersection. In addition, a landscaped detention basin would be constructed at the southwest corner of the existing 55th Avenue and Maryland Avenue intersection.

The ASC eliminated Alternative N-1 from further consideration because the proposed connector roads would be designed as one-way roads and would be more roundabout, which would result in out-of-direction travel and longer travel times for motorists when compared with either Alternative N-2b or S-2, which have two-way connector roads.



Key

———	Edge of Pavement
—- - —- - —	New Right-of-way
. . . . .	Proposed Detention Basin General Locale
→	Direction of Travel
1	Number of Through Lanes

Feet

0 400

NORTH TRUE

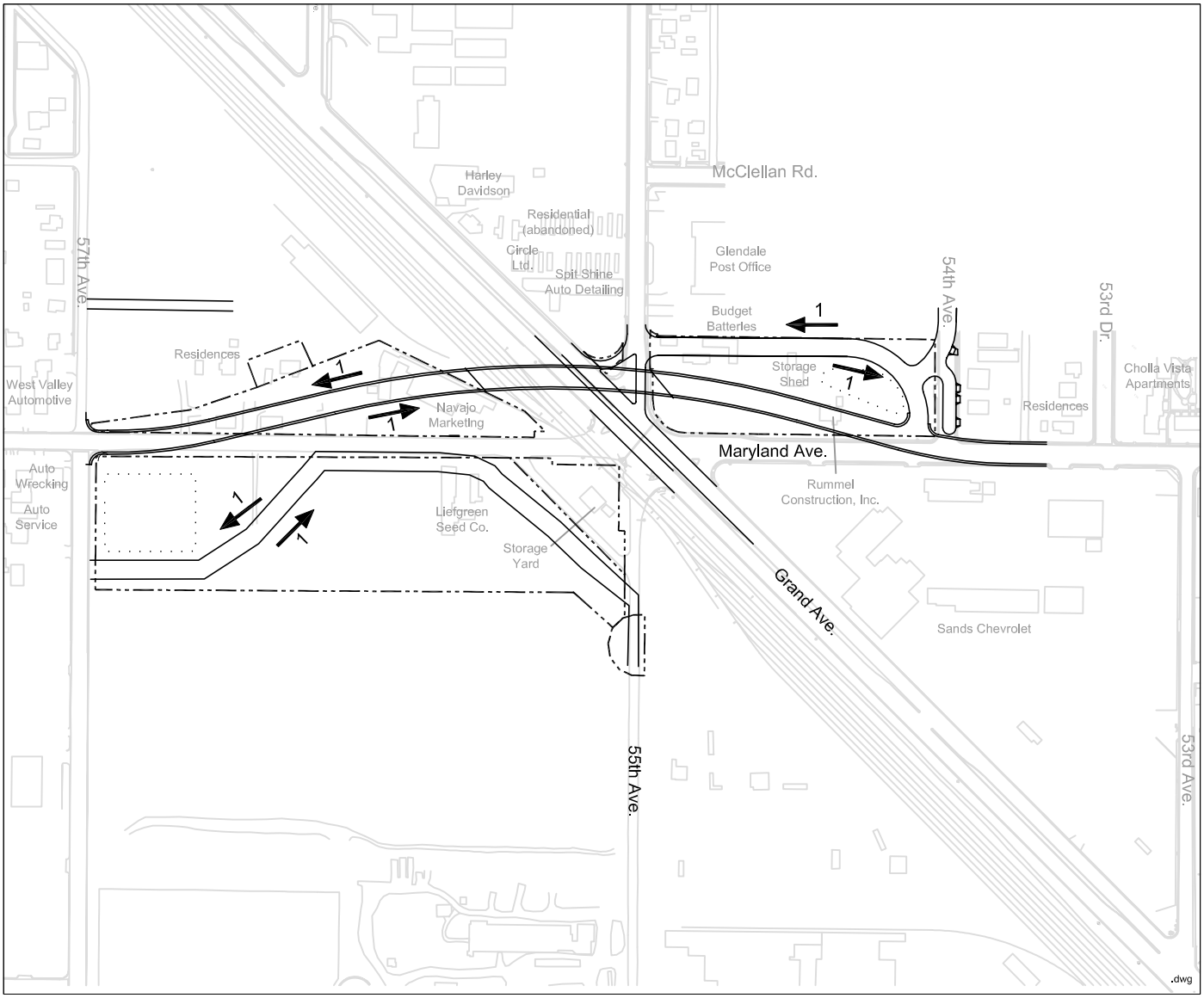
Figure 5. Alternative N-1

b. Alternative N-2a (northern alignment with two-way connector roads)

Alternative N-2a is similar to Alternative N-1 except that there would be a slight shift in the roadway geometry and street connector roads would be constructed as two-way roads as compared with one-way roads. The change in the roadway geometry for this alternative would allow the residences that would be acquired under Alternative N-1 to remain. Eight commercial properties located west of the 55th Avenue alignment would still be acquired. Furthermore, a detention basin would be constructed at the southwest corner of the existing 55th Avenue and Maryland Avenue intersection.

The 55th Avenue connection to Maryland Avenue would occur on the south side of the existing Maryland Avenue. A connector road stretching from 55th Avenue to approximately 250 feet south of Maryland Avenue along 57th Avenue would be constructed (refer to Table 3 and Figure 6). The proximity of this 55th Avenue connector road from Maryland Avenue is the only difference between this alternative and Alternative N-2b described later in this document. Intersections described in Alternative N-1 would also have traffic signals installed in this alternative. In addition, right turns to and from Grand Avenue and 55th Avenue would be accommodated.

Alternative N-2a was eliminated from further consideration by the ASC because the 55th Avenue connecter road would be only approximately 250 feet from the 57th Avenue and Maryland Avenue intersection, which could create conflicts for motorists turning onto the connector road from 57th Avenue.



Key

Edge of Roadway

New Right-of-way

Proposed Detention Basin General Locale

Direction of Travel

1 Number of Through Lanes

Feet

0 400

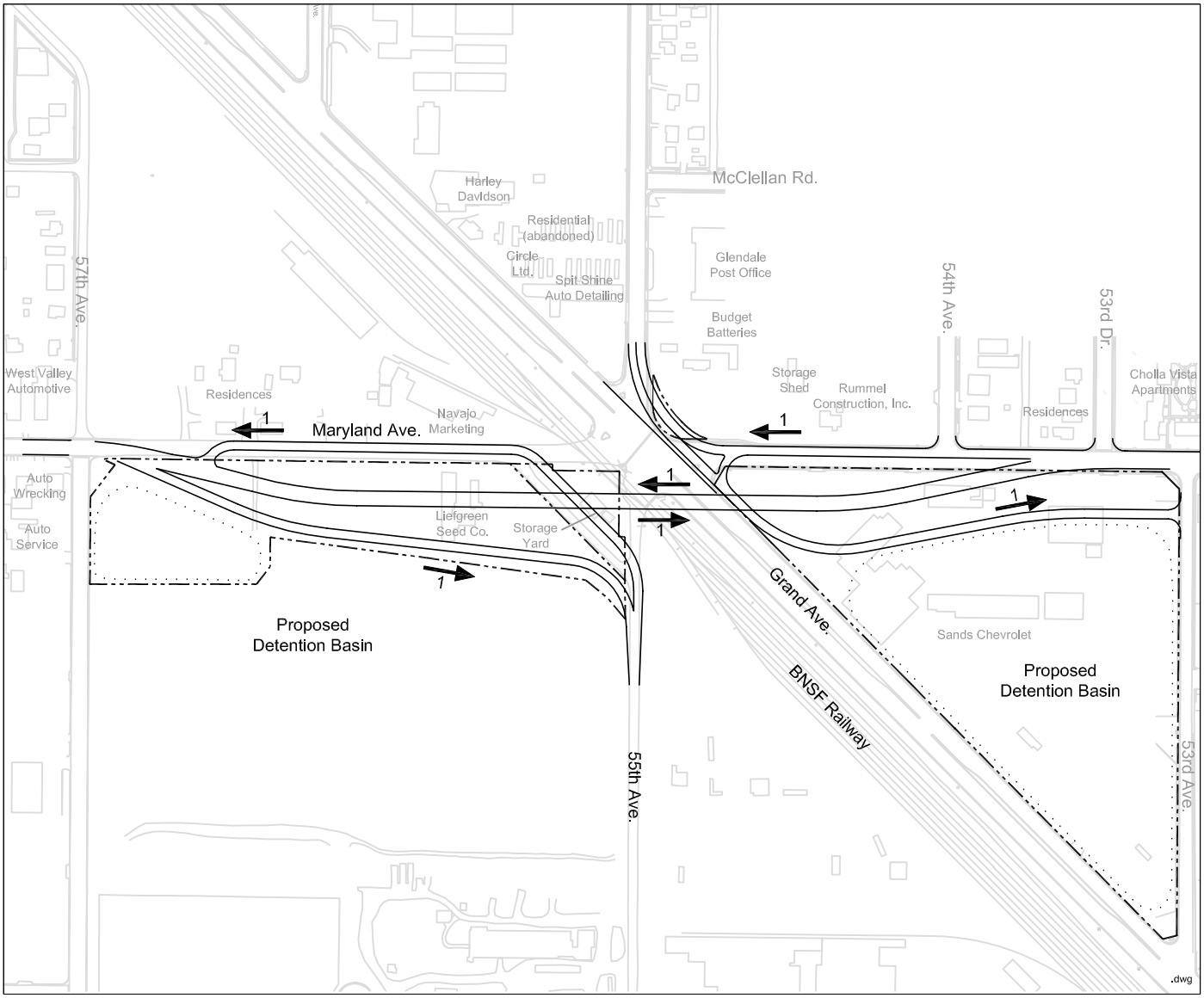
NORTH TRUE

Figure 6. Alternative N-2a

c. Alternative S-1 (southern alignment with one-way connector roads)

Alternative S-1 would include a Maryland Avenue overpass to the south of the existing Maryland Avenue centerline. Two commercial properties would be acquired. Access to adjoining commercial and residential properties and travel between Maryland and 55th Avenues would be provided from the construction of one-way connector roads. Grand Avenue would be disconnected from 55th Avenue (refer to Table 3 and Figure 7). Traffic signals would be installed at the intersection of Maryland Avenue and 53rd Avenue and also at the intersection of the connector road between the south leg of 55th Avenue and Maryland Avenue. Two detention basins would be constructed, one on the southwest corner of the existing 55th Avenue and Maryland Avenue intersection and the other at the existing location of Sands Chevrolet.

Alternative S-1 was eliminated from further consideration by the ASC because of the one-way connector road concepts. One-way connector roads would require out-of-direction travel for motorists attempting to gain access to some business locations along these one-way roads (e.g., Sands Chevrolet).



Key

Edge of Roadway

New Right-of-way

Proposed Detention Basin General Locale

Direction of Travel

1 Number of Through Lanes

Feet

0 400

NORTH TRUE

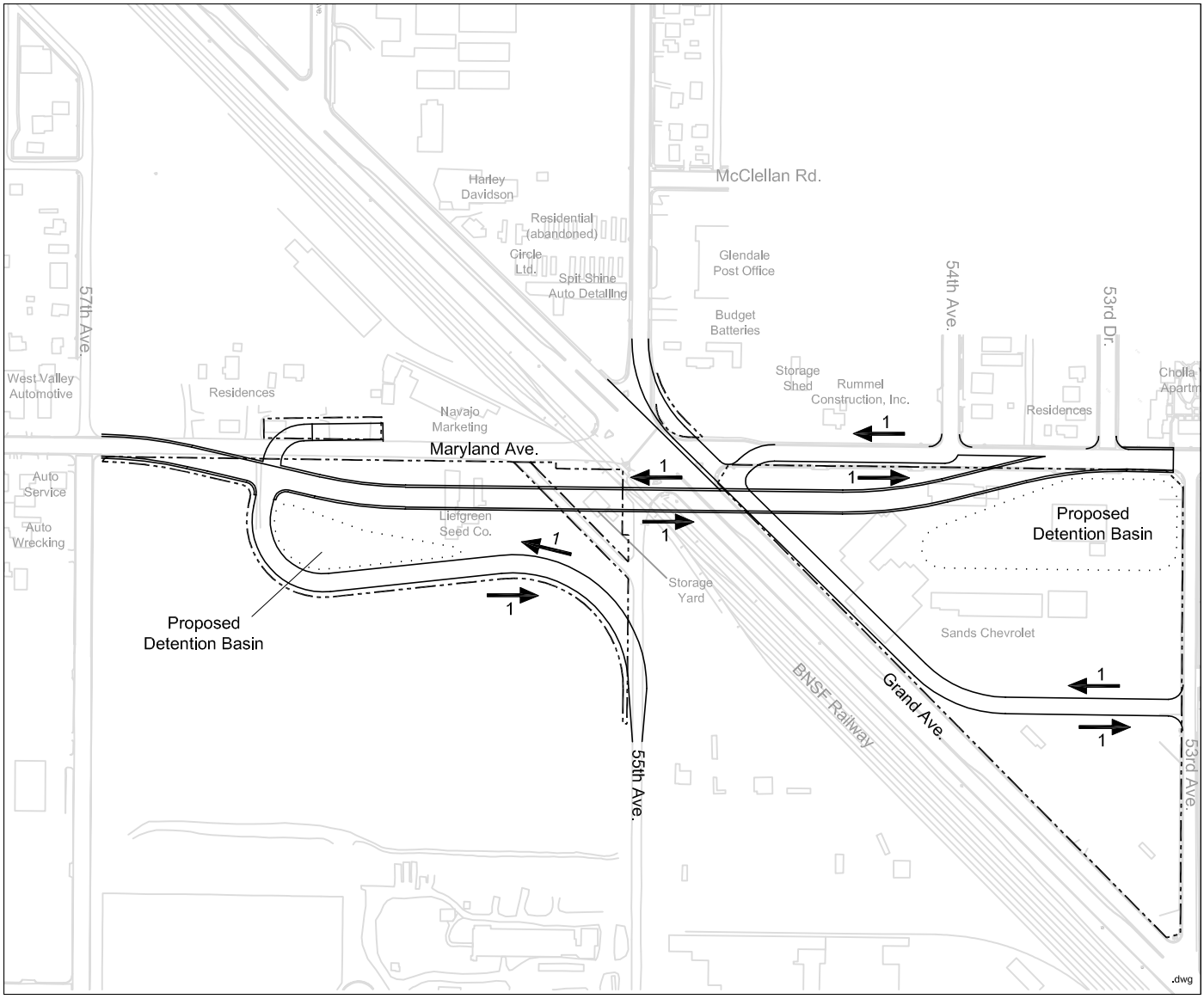
Figure 7. Alternative S-1

d. Alternative S-2 (southern alignment with two-way connector roads)

Alternative S-2 is similar to Alternative S-1 in the fact that it would include a Maryland Avenue overpass to the south of the existing Maryland Avenue centerline. However, access to adjoining commercial and residential properties and travel between Maryland and 55th Avenues would be provided from two-way connector roads. Grand Avenue would be disconnected from 55th Avenue (refer to Table 3 and Figure 8). Similar to Alternative S-1, traffic signals would be installed at the intersection of Maryland Avenue and 53rd Avenue and also at the intersection of the connector road between the south leg of 55th Avenue and Maryland Avenue. Additionally, the location of the east connector road would occur approximately 600 feet south of Maryland Avenue on 53rd Avenue.

Two detention basins would be constructed, one on the southwest corner of the existing 55th Avenue and Maryland Avenue intersection and the second at the southwest corner of Maryland and 53rd Avenue, which is the existing location of Sands Chevrolet.

Alternative S-2 was eliminated from further evaluation by the ASC because it would require more ROW to be acquired than Alternative N-2b. Traffic delays at the remaining Grand Avenue and 55th Avenue intersection would be essentially the same as Alternative N-2b. Two-connector roads would be more roundabout in Alternative S-2 and there would be no connection between 55th Avenue and Grand Avenue.



Key

———	Edge of Roadway
— - - — - - —	New Right-of-way
. . . . .	Proposed Detention Basin General Locale
→	Direction of Travel
1	Number of Through Lanes

Feet

0 400

NORTH TRUE

Figure 8. Alternative S-2

B. Preferred Alternative

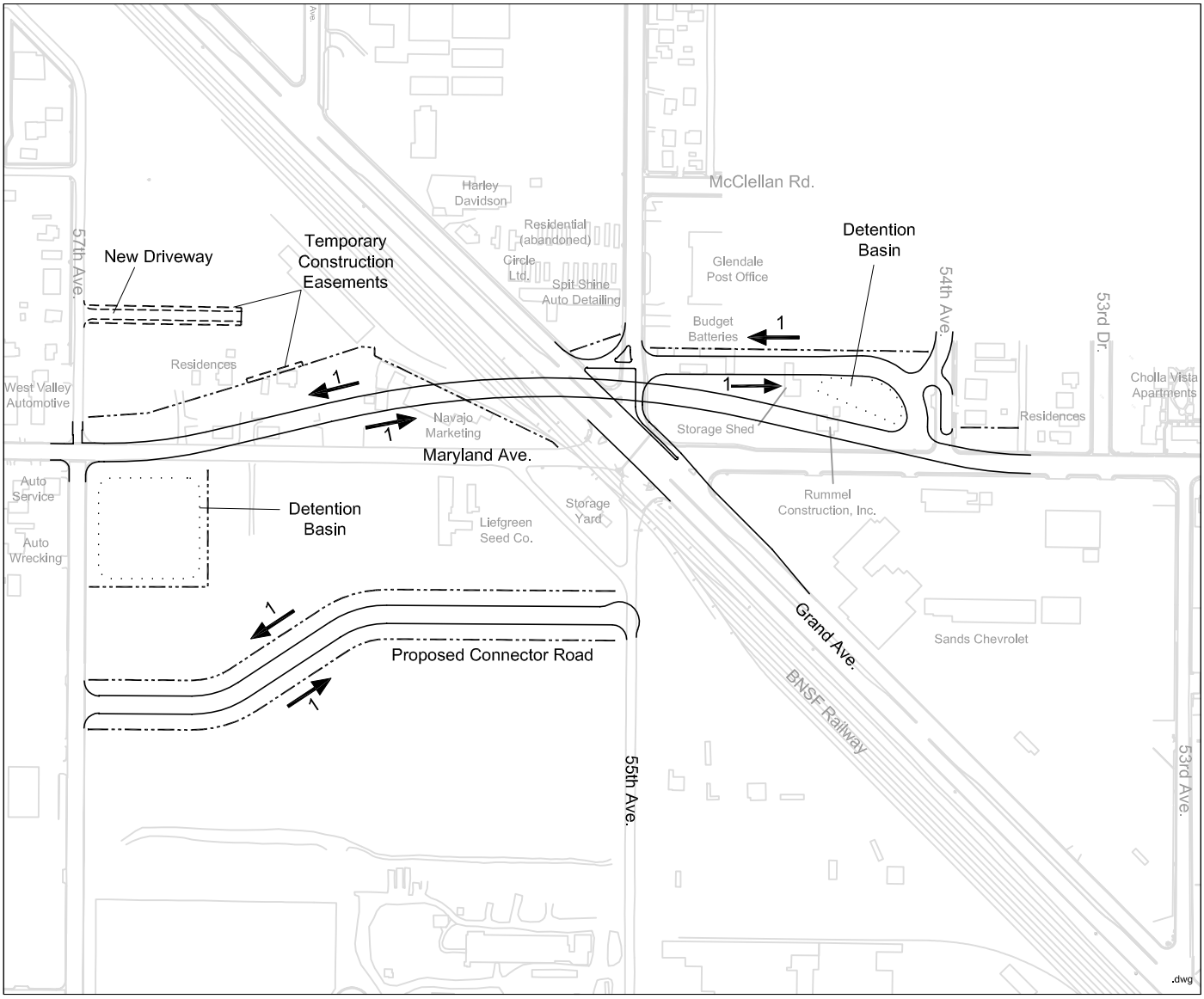
Alternative N-2b is similar to Alternative N-2a, except for the location of the 55th Avenue connector road. Alternative N-2b would realign Maryland Avenue as a grade-separation overpass slightly to the north of its existing alignment. Access to adjoining commercial and residential properties would be obtained from two-way connector roads. Travel between 55th Avenue and Maryland Avenue would be maintained via these two-way roads (refer to Table 4 and Figure 9). Northbound travel along 55th Avenue beginning just south of the existing 55th Avenue, Maryland Avenue, and Grand Avenue intersection would be eliminated and a connector road would be provided linking 55th Avenue and 57th Avenue. The 55th Avenue connection to 57th Avenue would occur on the south side of the existing Maryland Avenue alignment approximately 950 feet south of the Maryland Avenue and 57th Avenue intersection. Access to 54th Avenue would be provided. In addition, two detention basins would be built, one at the southeast corner of Maryland Avenue and 57th Avenue and the other in the center island between the connector road, which serves motorist traveling between the north segment of 55th Avenue, and Maryland Avenue, and 54th Avenue (refer to Figure 9).

Table 4. Description of Preferred Alternative

Criteria	Alternative N2b
New Right-of-Way (acres)	12
Parcels Taken	Commercial—8 Residential—0 BNSF—1
Costs (millions)	$15.4
Total Vehicular Delay	a.m.—26 sec/veh p.m.—47 sec/veh
Operational Issues/Considerations	• Two-way connector roads. • Access to businesses would be provided along two-way connector roads. • Right-turn to and from Grand Avenue and 55th Avenue would be provided.

Source: ADOT 2001. [1]sec/veh = seconds per vehicle

Alternative N-2b was identified by the ASC as the Preferred Alternative because the two-way connector road, in comparison to Alternatives N-1 and S-1, would have the most direct connection between 55th Avenue and Maryland Avenue, would provide a right-turn movement to and from Grand Avenue/55th Avenue, and, when compared to all other alternatives, would be the least expensive to construct. Furthermore, the proposed improvements meet the needs of the future projected traffic volumes for the year 2025.



Key

- Edge of Roadway
- New Right-of-way
- Detention Basin General Locale
- Direction of Travel
- 1 Number of Through Lanes

Feet

0 400

NORTH TRUE

Figure 9. Alternative N-2b

IV. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

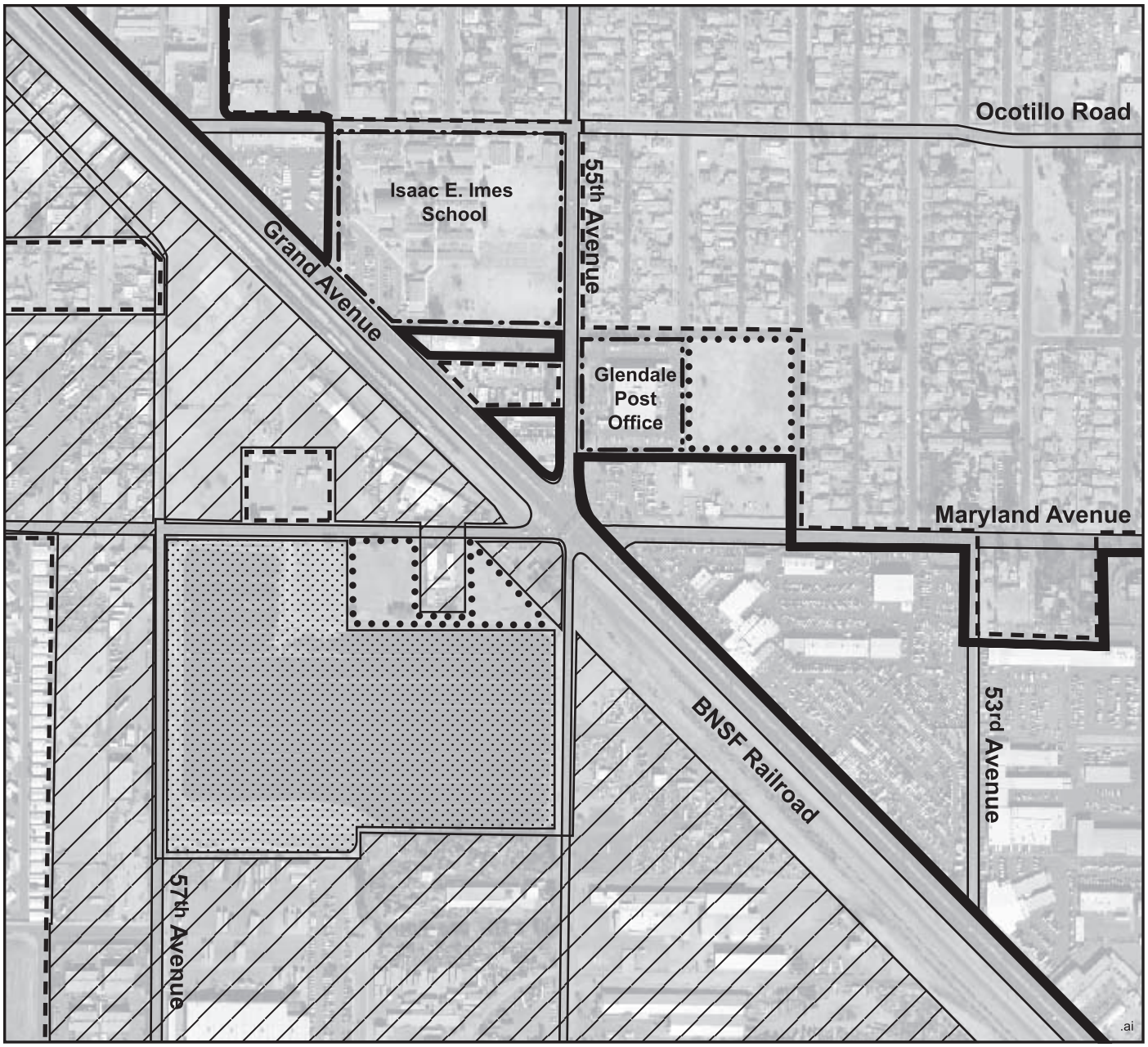
The following information describes the affected environment within the project area and presents the potential effects of the proposed project. Measures to avoid or minimize impacts have been identified and are summarized in the mitigation measures on page vii of this document. For this document, the north-south and east-west limits of the project area are approximately a one-half mile radius from the center of the existing Maryland Avenue, Grand Avenue, and 55th Avenue intersection. The visual and/or scenic resources identified could extend beyond the project area. The figures in this document depict a graphic representation of the width of the project area for illustrative purposes only.

A. Ownership, Jurisdiction, and Land Use

For the purposes of this EA, land ownership is identified in terms of public or private ownership. Jurisdiction implies the authority to regulate land uses. Land in the project area is under the jurisdiction of the City of Glendale and project-area canals are under the jurisdiction of the Bureau of Reclamation, but managed by the Salt River Project. Land ownership consists of BNSF, ADOT, City of Glendale, and privately owned parcels.

Existing land uses within the project area are residential, industrial/commercial, public/quasi-public, transportation (BNSF and roadways), vacant, and agriculture (refer to Figure 10). According to the *Glendale General Plan*, 1996, the area includes lands identified as light industrial, heavy industrial, general commercial and/or shopping center, and residential (refer to Figure 11). The residential areas are zoned for 3.5 to 12 residential units per acre. Furthermore, the area immediately north of Maryland Avenue to Orangewood Avenue, between 63rd Avenue and 51st Avenue is identified by the City of Glendale as part of its Downtown Redevelopment Area.

Alternative N-2b would require the acquisition of approximately 12 acres, which consists of eight existing commercial/industrial properties and a portion of the BNSF right-of-way. This acquisition would impact nine property owners. Three of these impacted properties would be full takes, while six would be partial acquisitions. These land use impacts would include a portion of the area identified by the City of Glendale as the Downtown Redevelopment Area. The portion of the Downtown Redevelopment Area that would be impacted is currently identified by City of Glendale planning documents as general commercial and light industrial. General commercial is defined by the City of Glendale as those areas that generally provide services for residents in local neighborhoods or are



Key

- Commercial
- Residential
- Industrial
- Agricultural
- Public/Quasi-Public
- Vacant

Mile

0.0 0.5 1.0

NORTH

Figure 10. Existing Land Use

Note: Downtown Redevelopment Area is north of Maryland Ave. to Orangewood Ave., west to 63rd Ave. and east to 51st Ave.

Key

- Glendale Downtown Redevelopment Area Boundary
- # - # Residential Units per Gross Acre
- GC General Commercial
- DO Downtown Office
- LI Light Industry
- HI High Industry
- PF Public Facility
- ES Elementary School
- NP Neighborhood Park

Mile

0.0 0.5 1.0

Figure 11. General Plan Designated Land Use

NORTH

highway-oriented businesses that provide services to people traveling along a major transportation route. Even though a portion of the Downtown Redevelopment Area would be permanently removed for construction of the proposed improvements, the remaining portion of this area could still be used for its intended use. Access would still be provided along Grand Avenue.

Other areas that would be impacted as a result of Alternative N-2b include a portion of the project area identified as light and heavy industrial just south of Maryland Avenue and a parcel east of 55th Avenue, but north of Maryland Avenue identified as general commercial. However, some of these areas could still be used for future developments.

Access changes could limit future consideration for redevelopment of some impacted parcels, and in some cases isolate parcels, especially in areas that would require substantial distances to connect business sites to existing roads. In addition, these access changes could limit the types of businesses that could potentially use these sites to those such as wholesale businesses or distributors that do not rely on customers driving to their business. Property owners would be compensated at market value for property acquired for project ROW in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act, as amended in 1987. Therefore, Alternative N-2b would not substantially impact project-area ownership, jurisdiction, or land uses.

B. Farmland

The Farmland Protection Policy Act of 1981 (FPPA) was implemented to insure that federal agencies "minimize the extent to which programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses and to assure that programs are administered in a manner that, to the extent practicable, will be compatible with State, local government, and private programs and policies to protect farmland."

The 1989 FHWA Policy Paper, "Guidelines for Implementing the Final Rule of the Farmland Protection Policy Act for Highway Projects," specifically addresses impacts to farmlands from transportation-related projects. This policy paper established guidance for special situations, which have bearing on the applicability of the FPPA definition of "farmland" as it relates to urban areas as follows:

> Prime farmland, which is already in or committed to urban development, is by definition farmland not subject to the FPPA. Unique farmlands and farmlands of statewide or local importance are, however, subject to the FPPA (even in areas already in or committed to urban development). Where the ROW

required for a highway project is wholly within a delineated urban area and the project requires no property from unique farmlands, or farmlands of statewide or local importance, the FPPA does not apply. The completion and processing of Department of Agriculture Form AD 1006 are not necessary (FHWA 1989).

The project area contains an agricultural field, which is located between 55th Avenue and 57th Avenue just south of Maryland Avenue (refer to Figure 10). During a site visit in October 2000, the field appeared to not be in use, but still contained infrastructure, such as ditches to transport water, that could enable the field to be used at any given point. According to the Natural Resources Conservation Service's Chandler Field Office, the agricultural field within the proposed project area has been designated as prime farmland (Wilson 2000).

Under FPPA, prime farmland, which is already in or committed to urban development, is by definition farmland not subject to the FPPA. Alternative N-2b would not substantially impact any unique farmland, or farmland of statewide or local importance. However, the proposed improvements would impact prime farmland for construction of the connector road between 55th Avenue and 57th Avenue, although this farmland, as identified above, is not subject to the FPPA (7 USC 4202, Rules, Title 7, Code of Federal Regulations [CFR], Part 658). Therefore, no substantial impacts to farmland would be anticipated.

C. Social and Economic Resources

According to 23 U.S.C. § 109(h), proposed federally funded highway projects must ensure that possible adverse economic, social, and environmental effects have been fully considered in developing the project and that the final decisions on the project are made in the best overall public interest, taking into account the need for fast, safe, and efficient transportation; public services; and the cost of eliminating or minimizing such adverse effects. The following information specifically identifies and evaluates those potential impacts on the social and economic environment within the proposed project area. Specific topics to be evaluated in this section include 1) neighborhood continuity; 2) social services, schools, and recreation; 3) emergency services; 4) relocations/displacements; and 5) temporary and/or permanent impacts to access, traffic patterns, and businesses.

Neighborhood continuity can be defined as the local area's connectivity or community cohesion among services including hospitals; government offices; schools; post offices; and even other residences by, from, or between local residents. Impacts to neighborhood continuity can vary in

magnitude between eliminating these services altogether from direct takes of these properties or simply affecting the motorist or pedestrian flow to and from these services.

Grand Avenue, due to its six lanes of travel, high traffic volume, and the BNSF, currently creates a barrier between those residents living southwest of Grand Avenue to and from respective community services. As a result, these residents have to travel across the six-legged intersection formed by Maryland Avenue, Grand Avenue, 55th Avenue, and the BNSF, or attempt to find alternative routes when excessive traffic delays or train-related delays occur.

Community facilities including a school (Isaac E. Imes Magnet School), a neighborhood park (Clavelito Park), and a post office (Glendale Post Office) are located adjacent to the proposed project area, but would not be directly affected under the implementation of Alternative N-2b. Isaac E. Imes Magnet School is located approximately one-quarter mile northwest of the existing Maryland Avenue, 55th Avenue, and Grand Avenue intersection, and Clavelito Park is located along the east side of 52nd Drive approximately one-half mile northeast of the intersection within a residential neighborhood. In addition, the Glendale Post Office is located north of the existing Maryland Avenue along 55th Avenue.

The fire services within the city of Glendale, as well as most other cities within the Phoenix Metropolitan Area, use the Regional Dispatch System operated by the City of Phoenix Fire Department. This system consists of a computer-aided dispatch system for 15 fire departments located in the metropolitan area. Intergovernmental agreements are established between each participating city. The advantage for all cities involved is that units are dispatched as if they were one single fire department. This system was first implemented in 1982 and upgraded in 1994.

The City of Glendale currently has seven fire stations providing community services to residents. However, no fire stations occur within the project area or immediate vicinity. Fire stations located within a reasonable response time for incidents near the 55th Avenue, Maryland Avenue, and Grand Avenue intersection include Glendale Fire Station Number 151 and Station Number 51 located approximately one mile northwest and one and one half mile north of the project area respectively. Ambulance services including initial response paramedics are provided by the City of Glendale's various fire stations.

Police services are provided by the City of Glendale. Police units are typically assigned patrols or routes and cover the entire jurisdiction of Glendale. In addition, no hospitals occur within or adjacent to the project area.

Grand Avenue is a multi-modal transportation corridor. Even though train, automobile, and truck travel are the primary transportation uses, bus routes and pedestrian and bicycle travel are also important transportation uses within the Phoenix Metropolitan Area. Maryland Avenue currently provides bicycle travel in the form of bike lanes within the city of Glendale (ADOT 1999). These bike lanes provide local residents with a safe travel corridor for alternative transportation uses. Alternative N-2b would allow enough room along the highway shoulder to accommodate room for bicycle travel. The addition of any bike lane improvements could be completed by the City of Glendale after completion of the project.

The RPTA bus line provides routes along Grand Avenue and other arterials within the Grand Avenue corridor. The RPTA Yellow Line (Grand Avenue route) operates every 30 minutes and provides ridership between downtown Peoria and the State Capitol (downtown Phoenix). Minimal impacts to the Yellow Line would be expected because the majority of the work would be performed along the new Maryland Avenue alignment and only temporary impacts during placement of bridge structures would affect Grand Avenue. Bridge placement work would primarily be completed during nighttime or weekend hours, when either bus ridership would be lower or not operating at all. Two bus stops are currently located within the project area, one along Grand Avenue on the northwest quadrant and one along Grand Avenue on the southeast quadrant.

No community services or facilities would be directly affected by the proposed improvements in Alternative N-2b. Local residents would be required to travel short out-of-direction distances to access services or areas north of Maryland Avenue, such as the Isaac E. Imes Magnet School and the Glendale Post Office. This additional travel time would not be substantially different when compared to the existing delay times associated with the six-legged intersection and the train traffic. Alternative N-2b affords alternative routes to access areas north of Maryland Avenue for those motorists traveling northbound on 55th Avenue. These routes would be more roundabout when compared to the typical delay times associated with the existing six-legged intersection of approximately three minutes during both the morning and afternoon peak traffic periods. However, these alternative routes could be beneficial under some circumstances. Train-related delays, for example, could add a substantial amount of time to the average signal length of three minutes.

Providing an alternative route to avoid these train-related traffic delays would be beneficial to local residents as well as emergency units such as fire engines or police cars.

Services such as the RPTA Yellow Line would be only minimally affected during construction. ADOT would coordinate with RPTA to address impacts and/or relocation of any permanently impacted bus stops or bus routes during final design. Therefore, impacts to community services or facilities would occur; however, these impacts are not anticipated to be substantial.

Access to local residents would be maintained during construction, although temporary detours or closures could be necessary during construction. However, because Maryland Avenue would be offset to the north, access impacts are anticipated to be minimal. Temporary detours or closures could be necessary during construction such as for the placement of bridge structures. Any sidewalks that would be temporarily closed during construction would be signed and alternative routes would be provided. The ADOT District Construction Office would notify the public prior to any temporary access impacts to pedestrians or motorists. Final details of any traffic or pedestrian restrictions would be evaluated during final design. Therefore, no substantial impacts to temporary access would be anticipated from the implementation of Alternative N-2b.

Depending on the time of year of construction activities, bus services for students attending the Isaac E. Imes Magnet School could also be affected. Bus routes for students that live south of the existing Maryland Avenue, Grand Avenue, and 55th Avenue intersection could be affected from typical construction-related delays or any temporary road closures or detours. ADOT's District Construction Office would coordinate with transportation representatives from the Isaac E. Imes Magnet School to minimize construction-related impacts on bus access to and from the school and/or develop alternative routes as necessary. Some students may walk to school. The current pedestrian environment at the intersection of Maryland Avenue, Grand Avenue, and 55th Avenue is poor because of heavy traffic and intersection design relative to the actual distance or time needed to cross the intersection. Ultimately, reducing the six-legged intersection to a three-legged intersection would improve pedestrian access across this intersection.

Traffic control would be in accordance with Part VI of the current *Manual on Uniform Traffic Control Devices for Streets and Highways*, published by the U.S. Department of Transportation, FHWA (2000), and the ADOT's Traffic Control Supplement (1996). Maintenance of traffic and access would be addressed in the traffic control plan, which would be developed during final design. Key aspects to be evaluated would include: 1) maintenance of traffic on Maryland Avenue, Grand Avenue, and 55th

Avenue, and access to local commercial/industrial and residential developments; 2) minimization of impacts to the BNSF mainline during construction of the overpass structure; and 3) maintenance of traffic flow during bridge construction and utility relocations. ADOT would coordinate with the BNSF during the development of the traffic control plan. In addition, no major roadway closures would be permitted between Thanksgiving and January 1st. Detours would be coordinated with adjacent projects to minimize potential conflicts. Final details of detours would be evaluated during final design. Any full closures along Grand Avenue, 55th Avenue, and Maryland Avenue would occur at night or during weekend hours.

Currently, a relatively small number of businesses occur within and adjacent to the project area. However, a neighborhood does occur along the north side of the project area immediately adjacent to Maryland Avenue. Existing businesses include the Liefgreen Seed Company, Navajo Marketing, Sands Motor Company, Rummel Construction Company, West Side Credit Corner, and Spit Shine Auto Detailing (refer to Figure 12).

Alternative N-2b would require the acquisition of eight commercial properties, but would not involve the relocation or displacement of any residents. Even though the proposed project would require the acquisition of these eight commercial businesses and would impact the project-area-specific economy, other businesses do occur within a relatively short distance (downtown Glendale) that could provide job opportunities for the local workforce and/or business opportunities. Therefore, the project would not substantially affect the overall economic viability or substantially affect the local workforce.

Short-term economic impacts could occur as a result of the added congestion typical during roadway construction projects. The proposed project could provide short-term employment opportunities for local residents as part of the construction workforce. During construction, some workers may purchase food and other commodities and generate revenue for the nearby businesses in the downtown Glendale area.

Economic impacts resulting from permanent access changes are not expected to be substantial. Access to businesses would be provided along two-way connector roads, although many of the businesses could gain access from other arterials that would not require a customer to enter the project area.

Figure 12. Existing Business Locations

Permanent access changes would occur with the construction of Alternative N-2b. Because Maryland Avenue would be reconstructed as a grade-separation overpass passing over Grand Avenue and 55th Avenue, no direct access would be provided on the elevated portion. Traffic along northbound 55th Avenue through the Grand Avenue intersection would no longer be permitted. At this point traffic would be routed along a connector road that links 55th Avenue to 57th Avenue southwest of Grand Avenue. Motorists would then be able to access Maryland Avenue along 57th Avenue. Furthermore, modifications to 54th Avenue would result in new access to northbound 55th Avenue and Maryland Avenue along a connector road that stretches between Maryland Avenue and 55th Avenue just south of the Glendale Post Office. While indirect travel along connector roads would be provided, some routes would be more roundabout. Therefore, although substantial modifications to access would occur, these changes would not substantially impact project area access in the future.

Traffic patterns and service would function differently than they do today. Because of the grade-separation overpass, no direct connections would allow motorists traveling along Maryland Avenue to directly access either Grand Avenue or 55th Avenue. Some out-of-direction travel would be required along connector roads. However, impacts to traffic patterns and service would not be substantial.

Excluding businesses that would be acquired for project-specific ROW, no permanent disruptions are anticipated. In addition, parcels used to construct connector roads or detention basins that would still contain unused portions could be used for future businesses or expansion of existing businesses after construction is completed. These locations could be limited to certain business types due to the out-of-direction travel.

Any sidewalks that would be temporarily closed during construction would be signed and alternative routes would be provided. The District Construction Office would notify local residents prior to any temporary access impacts to pedestrians or motorists. Final details of any traffic or pedestrian restrictions would be evaluated during final design. Furthermore, the District Construction Office would coordinate with bus transportation representatives from the Isaac E. Imes Magnet School to minimize construction-related impacts on bus access to and from the school and/or develop alternative routes to use as necessary. No full traffic closures would be permitted between Thanksgiving and January 1st. Any full closures along Grand Avenue, 55th Avenue, and Maryland Avenue would occur at night or during weekend hours. During final design, ADOT would evaluate maintaining outside shoulder widths to accommodate the future striping of bike lanes along the Maryland Avenue grade-separation structure or would evaluate an alternative location to accommodate these uses.

D. Title VI/Environmental Justice

The MAG 1995 Special Census of Maricopa County and the U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing were used to compare and contrast the demographic and economic characteristics of the project area with those of the City of Glendale and Maricopa County. Census tracts are small, relatively permanent statistical subdivisions of a county, and do not cross county boundaries (refer to Figure 13). Block groups, as used in this document, are even smaller statistical subunits of census tracts (refer to Figure 13). For this document, block groups are used as the smallest level of census resolution representing 1990 census data.

Enumeration districts (ED) are similar to block groups but reflect information from the 1995 Special Census of Maricopa County (refer to Figure 13). Both 1990 and 1995 census data are reported in the following table in order to represent the use of the most recent statistical numbers for the smallest geographic area. The statistics reported may extend outside the project area; therefore, the exact population and demographic characteristics of the project area may vary from these data. In addition, shaded numbers in the following table illustrate those represented census units with percentages greater than the respective city and/or county.

Minority racial populations as defined by the U.S. Census include the following racial categories: African American, American Indian/Eskimo and Aleut (Native American), Asian and Pacific Islander, and "Other race." In addition, the category "Hispanic" is used for all Hispanics (regardless of race), even for those Hispanics who identified themselves as "White." Disabled individuals are persons 16 years of age and older who are either work disabled, have self-care limitations, or have a mobility disability. Low income is defined as a person 18 years of age or older who is below the poverty level estimated from the 1990 Census. Elderly refers to individuals who are 60 years of age or older.

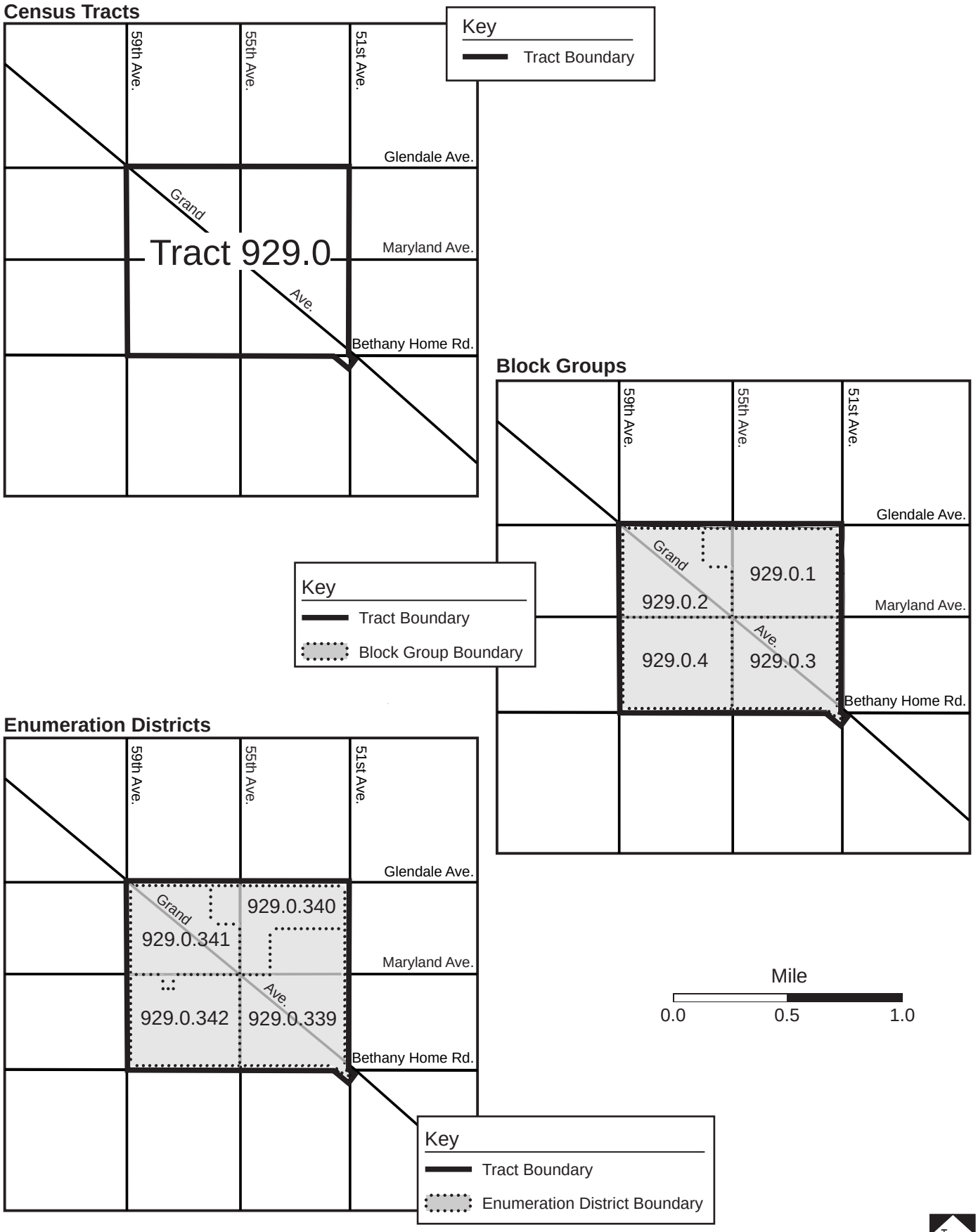


Figure 13. Census Tracts, Block Groups, and Enumeration Districts

To be consistent with the requirements of Title VI of the Civil Rights Act of 1964 and to meet the objectives of the Executive Orders regarding Environmental Justice, the demographic characteristics of the population of the project area were examined to determine whether minority and low-income populations would be disproportionately affected by the proposed project. Under Title VI of the Civil Rights Act of 1964 and related statutes, federal agencies are required to ensure that no person is excluded from participation in, denied benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance on the grounds of race, color, religion, national origin, sex, age, or disability. Executive Order 12898*, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994, requires federal agencies to identify and address as appropriate, disproportionately high and adverse effects on minority, elderly, low-income, disabled individuals (mobility disability), and women as head of household.

Hispanic populations dominate the project area and vicinity with an average representative percent population estimate of 70.9 percent. In addition, the group identified as "Other" contains an ED average of approximately 56 percent (refer to Table 5).

Table 5. 1995 Population and Racial Demographics

Area	Total Population	White		African American		Native American		Asian		Other		Hispanic[1]	
		No.[2]	%[2]	No.	%	No.	%	No.	%	No.	%	No.	%
ED 929.0.339	789	356	45.1	46	5.8	30	3.8	9	1.1	348	44.1	642	81.4
ED 929.0.340	791	36	4.6	10	1.3	2	0.3	1	0.1	742	93.8	758	95.8
ED 929.0.341	463	126	27.2	11	2.4	1	0.2	4	0.9	321	69.3	355	76.7
ED 929.0.342	750	477	63.6	53	7.1	52	6.9	16	2.1	152	20.3	226	30.1
All EDs	2,793	995	35.6	120	4.3	85	3.0	30	1.1	1,563	56.0	1,981	70.9
City of Glendale	182,615	144,626	79.2	8,129	4.5	2,688	1.5	4,353	2.4	22,819	12.5	36,093	19.8
Maricopa County	2,551,765	2,019,556	79.1	93,358	3.7	45,843	1.8	51,231	2.0	341,777	13.4	522,487	20.5

Source: Maricopa Association of Governments. 1995 Special Census for Maricopa County: Summary Tables, September 1997.
[1]Hispanic refers to ethnicity and is derived from the total population and not as a separate race. Population numbers and percentages are calculated separately and therefore, numbers when added to other races will not total 100 percent.
[2]No. = number of persons which were counted within a particular race or ethnicity. % = Percent of total population.

Table 6 indicates that the largest representative population of those persons greater than or equal to 60 years of age occurs within ED 929.0.340, with a population of 157 individuals or 19.8 percent of the total population. This ED, as well as the other three evaluated in this EA, is greater than the percentage estimated for the city of Glendale. Comparatively, data obtained for Maricopa County are

essentially the same as ED 929.0.342, higher than data obtained for EDs 929.0.339 and 929.0.341, and lower than those population percentage estimates obtained for ED 929.0.340.

Table 6. 1995 Percentage of Population Greater Than or Equal to 60 Years of Age

Area	Total Population	≥ 60 Years of Age	
		Number	Percentages
ED 929.0.339	789	110	13.9
ED 929.0.340	791	157	19.8
ED 929.0.341	463	64	13.8
ED 929.0.342	750	123	16.4
All EDs	2,793	454	16.3
City of Glendale	182,615	20,193	11.1
Maricopa County	2,551,765	411,213	16.1

Source: Maricopa Association of Governments. *1995 Special Census for Maricopa County: Summary Tables, September 1997.*

The percentages of households living below poverty within Tract 929.0 are approximately four times greater than percentages obtained for both the city of Glendale and Maricopa County (refer to Table 7). However, as mentioned earlier, tract-level data are the largest census unit recorded and in this specific case includes census information for households outside of the proposed project area. No smaller census-unit-level data were available for this location.

Table 7. 1995 Percentage of Households Living Below Poverty

Area	Households With Income Reported	Below Poverty	
		Number	Percentages
Tract 929.0	586	255	43.5
City of Glendale	42,583	4,857	11.4
Maricopa County	608,777	63,392	10.4

Source: Maricopa Association of Governments. *1995 Special Census for Maricopa County: Summary Tables, September 1997.*

Data from 1990 Block Group census units indicating a mobility disability near the proposed project were on average twice the percentage estimates for both the city of Glendale and Maricopa County (refer to Table 8). Block Group 929.0.3 indicates a population of 26 people 16 years of age or older who have a mobility disability. However, because census units extend outside of the project area and, in this case, commercial properties are primarily located within this portion of the project area, it is probable that these numbers reflect individuals outside of the project area.

Table 8. 1990 Percentage of Population with Mobility Disability			
Area	Population ≥ 16 Years of Age	Mobility Disability	
		Number	Percentages
Block Group 929.0.1	1,261	337	26.7
Block Group 929.0.2	307	27	8.8
Block Group 929.0.3	26	26	100.0
Block Group 929.0.4	602	201	33.4
All Block Groups	2,196	591	26.9
City of Glendale	108,107	13,790	12.8
Maricopa County	1,595,853	207,610	13.0

Source: U.S. Department of Commerce, Bureau of the Census. *1990 Census of Population and Housing, Summary Tape File 3A for Arizona and Utah*. 1992.

Data from 1990 Block Groups identifying the percentage of females as the head of households indicate that the project area and adjacent neighborhoods are approximately double those estimates for both the city of Glendale and Maricopa County (refer to Table 9). Block Group 929.0.1 specifically, is nearly three times higher than both the estimates for the City of Glendale and Maricopa County.

Table 9. 1990 Percentage of Female Heads of Household			
Area	Total Households	Female Heads of Household	
		Number	Percentages
Block Group 929.0.1	497	176	35.4
Block Group 929.0.2	114	18	15.8
Block Group 929.0.3	16	0	0.0
Block Group 929.0.4	401	28	7.0
All Block Groups	1,028	222	21.6
City of Glendale	53,871	6,463	12.0
Maricopa County	808,162	79,646	9.9

Source: U.S. Department of Commerce, Bureau of the Census. *1990 Census of Population and Housing, Summary Tape File 3A for Arizona and Utah*. 1992.

A survey (i.e., questionnaire) of the project-area businesses was completed because of the identification of a high Hispanic population, relatively high number of low-income households, and the potential to remove a Title VI-related business or impact customers or employees of a Title VI-related business (Appendix C). This survey questionnaire was designed to collect information from the potentially impacted businesses such as potential impacts to owners, employees, and customers of which, all or some could be of a Title VI population. These impacts could include a direct impact to a Title VI population through loss of business directly as the owner, impact to customers or employees,

permanent/temporary access changes resulting in inability or difficulty in a customer reaching the business, and/or a permanent change in the local Title VI population's employment possibilities. The survey questionnaire was developed and approved by ADOT and FHWA. A total of seven businesses were surveyed at the Maryland Avenue, 55th Avenue, and Grand Avenue intersection. This number differs from the eight commercial properties identified in Alternative N-2b because two of the businesses were owned and/or managed by the same individual.

Survey results indicated that the seven businesses do not rely on the local residents (those within the immediate vicinity of the business) and most employees are not from the immediate area. In addition, ownership, customers, and employees varied by race and/or ethnicity. No substantial differences were noted when comparing potential acquisition of businesses or access changes to businesses during or after construction. Therefore, no disproportionate impacts to any minority or low-income populations, with respect to project area businesses, would occur as a result of construction of Alternative N-2b.

E. Cultural Resources

A number of federal and state laws have been established to provide protection for cultural resources and to ensure "future generations" a genuine opportunity to appreciate and enjoy our rich national heritage (Public Law 89-665). Cultural resources (historic properties) must be evaluated under each of these laws to ensure adequate protection of our cultural heritage.

Historic properties include prehistoric and historic sites, districts, buildings, structures or objects included in or eligible for inclusion in the National Register of Historic Places (NRHP). Historic properties may be eligible for nomination to the NRHP if they "...possess integrity of location, design, setting, materials, workmanship, feeling and association..." and if these resources are (a) either associated with significant themes in history or (b) significant persons in history, (c) embody distinctive construction characteristics or works of a master, and/or (d) have the potential to yield information important to history or prehistory.

A Programmatic Agreement (PA) has been prepared and executed to address the cultural-resources concerns of this project and of the seven other proposed intersection improvements along Grand Avenue (refer to Appendix A). This PA provides a detailed agreement regarding the inventory, evaluation, and, if necessary, treatment and/or data recovery plan for the proposed project. The PA ensures that FHWA adheres to all laws as defined in 36 CFR 800. Furthermore, the PA represents a

commitment of consultation and coordination among FHWA, ADOT, the State Historic Preservation Officer (SHPO), the Cities of Phoenix, Glendale, and Peoria, and the Hopi Tribe, Salt River Pima-Maricopa Indian Community, Fort McDowell Mohave-Apache Indian Community, Yavapai-Prescott Indian Tribe, and the Yavapai-Apache Indian Tribe. The PA was executed and filed with the Advisory Council on Historic Preservation in April 2001.

An archaeological survey of the entire project area was completed in 2001 and documented in *A Class III Archaeological Survey of Four Intersections Along Grand Avenue (US 60) (55th Avenue at Maryland Avenue, 59th Avenue at Glendale Avenue, 67th Avenue at Northern Avenue, and 75th Avenue at Olive Avenue), Maricopa County, Arizona* (ADOT 2001). Several historic property surveys have occurred along this portion of Grand Avenue within the last 20 years. Recent assessment of present historic resources within the project area occurred in two phases. A historic property reconnaissance survey was undertaken by ADOT in April 2001 and documented in *Historic Property Reconnaissance Survey Report for Selected Intersections along Grand Avenue*. The report identified several areas within and adjacent to the project area which would require additional investigation. The results of the study of those areas requiring additional analysis are documented in *Grand Avenue Intersections Phase II Historic Property Documentation and Evaluation* (ADOT 2001).

According to the National Register Bulletin *Guidelines for Evaluating and Documenting Traditional Cultural Properties*, a Traditional Cultural Place (TCP) can generally be defined as a place that is eligible for inclusion, or listed on, the NRHP (National Register of Historic Places) "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identify of the community." FHWA has conducted early and continual consultation with agencies and Native American Tribes that may attach religious or cultural importance to affected properties throughout the Grand Avenue corridor project area. No TCPs were identified by the consulted agencies and Native American Tribes invited to participate in the PA for this project.

No NRHP-listed, eligible, or potentially eligible archaeological or historic property resources were identified within the 55th Avenue, Maryland Avenue, and Grand Avenue project area. Because there are no NRHP-listed, eligible, or potentially eligible properties within the limits of the 55th Avenue, Maryland Avenue, and Grand Avenue project area, the proposed project would have no effect on known archaeological or historic resources. SHPO concurred with the recommendation that no historic properties would be affected by the proposed project (refer to Appendix A).

According to *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction*, Section 107 Legal Relations and Responsibility to Public (2000 Edition) (Stored Specification 107.05 Archaeological Features), if previously unidentified cultural resources are encountered during activities related to the construction of the project, the contractor would stop work immediately at that location and would take all reasonable steps to secure the preservation of those resources and notify the ADOT Engineer. The ADOT Engineer would contact the Environmental Planning Group immediately and make arrangements for the proper treatment of those resources. ADOT would, in turn, notify the appropriate agency(ies) to evaluate the significance of those resources.

F. Section 4(f) of the Transportation Act

Section 4(f) of the U.S. Department of Transportation Act of 1966 states that the FHWA

> may approve a transportation program or project requiring publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or land of a historic site of national, state, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if there is no prudent or feasible alternative to using that land and the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use. (49 U.S.C. 303)

A "use" of a Section 4(f) resource, as defined as in 23 CFR 771.135 (p) occurs: 1) when land is permanently incorporated into a transportation facility, 2) when there is a temporary occupancy of land that is adverse in terms of the statute's preservationist purposes, or 3) when there is a constructive use of land. A constructive use of a Section 4(f) resource occurs when the transportation project does not incorporate land from the Section 4(f) resources, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired. For example, a constructive use can occur when:

a) The projected noise level increase attributable to the project substantially interferes with the use and enjoyment of a noise-sensitive facility of a resource protected by Section 4(f);

b) The proximity of the proposed project substantially impairs aesthetic features or attributes of a resource protected by Section 4(f), where such features or attributes are considered important contributing elements to the value of the resource. An example of such an effect would be the location of a proposed transportation facility in such proximity that it obstructs or eliminates the primary views of an architecturally significant historical building, or

substantially detracts from the setting of a park or historic site which derives its value in substantial part due to its setting; and/or

c) The project results in a restriction on access, which substantially diminishes the utility of a significant publicly owned park, recreation area, or historic site.

There is no publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site in the project area that would be directly impacted. However, Clavelito Park and Isaac E. Imes Magnet School are both located north of Maryland Avenue approximately 0.25 mile north of the proposed project limits. The Isaac E. Imes Magnet School located between Grand Avenue and 55th Avenue, has typical playground facilities such as sport courts, soccer/football fields, and playground equipment that are available for public use during non-school hours (e.g., weekends, after school). Clavelito Park is a small neighborhood park located along 52nd Avenue north of Maryland Avenue. The park is primarily intended to serve those residents within the surrounding neighborhood.

Access to one of the Section 4(f) properties, as mentioned above, could be impacted both during construction and as a result of the proposed improvements. The construction of Alternative N-2b would create delays during construction and some out-of-direction travel after construction is completed for those residents living south of the existing 55th Avenue, Maryland Avenue, and Grand Avenue intersection who attempt to access the Isaac E. Imes Magnet School. However, when compared to the existing traffic delays of approximately three minutes, the proposed improvements associated with Alternatives N-2b would substantially reduce delay times. Access would be rerouted, under Alternative N-2b, for those residents living south of the current intersection to routes located west of 55th Avenue along 57th Avenue. In addition, because Clavelito Park is primarily designed to serve the local neighborhood residents, no access restrictions are anticipated. Therefore, there is no Section 4(f) involvement with the construction of this project.

G. Air Quality Analysis

The 1990 Clean Air Act Amendments and NEPA require that air quality impacts be addressed in the preparation of the environmental document. The level of effort used to evaluate these impacts may vary from a simplified description to a detailed, microscale analysis depending on factors such as the project location and size, the meteorology of the project area, the air quality attainment status of the area, and the State Air Quality Standards.

The air quality analysis for the proposed improvements to Maryland Avenue at the 55th Avenue and Grand Avenue intersection focused on vehicle emissions of carbon monoxide (CO). Other pollutants, such as particulate matter and oxides of nitrogen are also components of vehicular emissions; however, the impacts of CO are most easily assessed and provide a convenient indicator of air quality impact.

An air quality study was completed by ADOT in October 2001, and reported in a document entitled *Air Quality Technical Report, Maryland Overpass At Grand Avenue (US 60) and 55th Avenue, Glendale, Arizona*. The purpose of this study was to provide information regarding potential air quality changes as a result of the proposed project when comparing the existing traffic conditions with the 2025 No Build Alternative and the proposed build alternatives. Existing peak-hour traffic volumes and future 2025 peak-hour traffic volumes were used for this analysis.

The project lies within an area that is designated as nonattainment for CO, ozone (O_3), and particulate matter (PM_{10}). The Phoenix CO and O_3 nonattainment area is defined as the boundaries of MAG's planning area. The Phoenix PM_{10} nonattainment area is defined as an area within eastern Maricopa County measuring approximately 60 miles by 48 miles and an additional area within Pinal County that is 6 miles by 6 miles. The proposed improvements to the Maryland Avenue, 55th Avenue, and Grand Avenue intersection are included in the Transportation Improvement Program for Fiscal Years 2002-2006, as approved by MAG on July 25, 2001, which conforms to the State Implementation Plan and the State Transportation Improvement Plan.

Maximum 1-hour and 8-hour concentrations of CO were obtained for the existing traffic conditions and roadway configurations, and predicted for the No Build Alternative with 2025 traffic conditions and the Alternative N-2b 2025 traffic conditions (refer to Table 10). Under the 2025 No Build Alternative, maximum projected 1-hour and 8-hour concentrations of CO were slightly lower than for the current concentrations. These projected lower concentrations were due to the improved technology predicted for automobiles and the resulting reduction in emission factors in 2025. Specifically, the air quality data gathered for the existing conditions scenario indicate that the current 1-hour concentrations range between 3.3 and 7.9 parts per million (ppm), while the 2025 No Build Alternative ranged between 3.2 and 7.3 ppm. Alternative N-2b 2025 1-hour concentrations ranged between 3.1 and 4.1 ppm. Under the National Ambient Air Quality Standards (NAAQS), the acceptable limit for CO concentration for the 1-hour averaging time is 35 ppm.

The predicted maximum 8-hour concentrations for Alternative N-2b in 2025 were also lower than those values obtained for the existing conditions, and were lower than the 2025 No Build Alternative.

The CO concentrations projected for both the 2025 No Build and Alternative N-2b 2025 are below the NAAQS (refer to Table 10). The proposed improvements to Maryland Avenue at the 55th Avenue and Grand Avenue intersection are expected to reduce long-term impacts of the air quality to the area.

Table 10. Results of Air Quality Modeling

Scenario Measured/Modeled	Year	Maximum Afternoon Hour CO Concentration (ppm)	
		1-Hour Averaging Time (NAAQS Standard = 35 ppm)	8-Hour Averaging Time (NAAQS Standard = 9 ppm)
Existing	2001	3.3 – 7.9	2.3 – 5.5
No Build Alternative	2025	3.2 – 7.3	2.2 – 5.1
Alternative N-2b	2025	3.1 - 4.1	2.2 – 2.9

Source: ADOT 2001

Under Alternative N-2b, short-term impacts to CO may occur during construction due to the interruption of normal traffic flow. Efforts should be made to reduce traffic slowing, especially during the peak travel hours. Changes in CO levels as a result of the proposed alignment may be considered very minor. Furthermore, short-term increases to PM_{10} levels may also occur during the construction phase with Alternative N-2b, but these impacts may be reduced through using watering or other dust control measures. Air quality impacts would be reduced as a result of reduced traffic congestion with the implementation of Alternative N-2b (refer to Table 10). This reduction of impacts is also due to the anticipated technological advances in vehicular emission systems in the design year 2025.

Alternative N-2b would not result in increased levels of CO or other sources of pollutants as a result of construction. Short-term temporary impacts would occur as a result of construction, but these impacts would be minimal. Therefore, Alternative N-2b would not substantially impact the local or regional air quality.

The contractor would adhere to Maricopa Rules 310 and 360 regarding fugitive dust emissions and new source performance standards, respectively, during construction. The contractor would be responsible for obtaining any necessary asbestos permits for demolition of any structures. In addition, the District Construction Office would coordinate with the Maricopa County Environmental Services Department during the planning of night-time road closures or detours during winter months for air quality purposes.

H. Noise Analysis

An analysis of potential noise impacts was conducted within the proposed project area, pursuant to the ADOT Noise Abatement Policy (NAP), dated March 21, 2000, and in accordance with the provisions of Title 23 CFR Part 772 - Procedures for Abatement of Highway Traffic Noise and Construction Noise. The analysis was completed by ADOT and documented in a report entitled *Noise Study Technical Report, Maryland Avenue Overpass at Grand Avenue (US 60)/55th Avenue, Glendale, Arizona*. The purpose of the noise study is to analyze the potential traffic-generated noise impacts from the proposed improvements as identified in Alternative N-2b.

As identified in Table 11, FHWA's Noise Activity Categories (NAC) are used to compare results of field monitoring. The NAC are formulated by combining land use designations with the acceptable exterior noise levels. The range of common indoor and outdoor noise levels are illustrated in Figure 14.

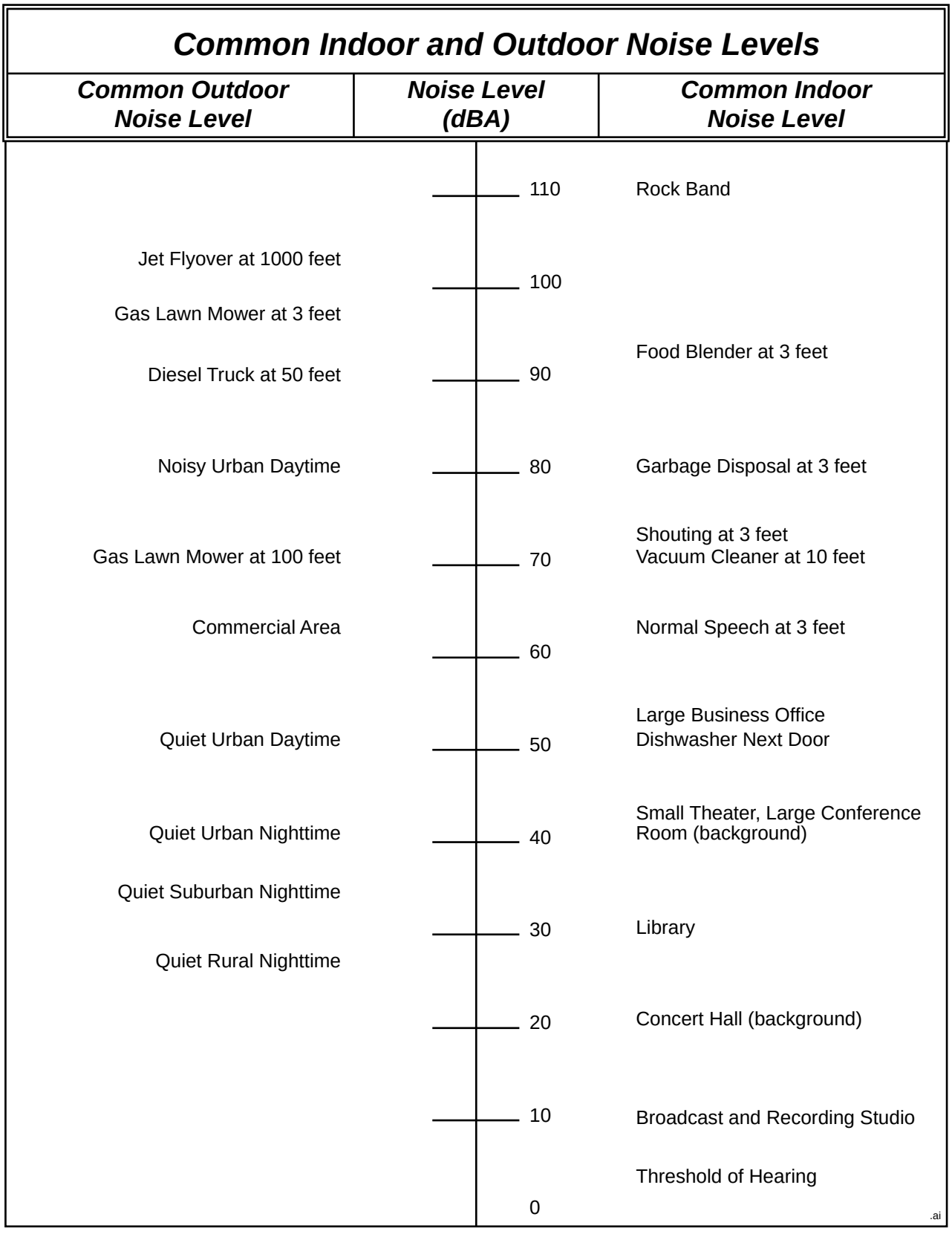
Table 11. Noise Abatement Criteria (NAC) Hourly A-Weighted Sound Level – Decibels (dBA)

Activity Category	$L_{Aeq\ 1h}$	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D		Undeveloped lands.

The decibel (dB) is a logarithmic unit that expresses the ratio of the sound pressure level being measured to a standard reference level.
It has been found that the A-scale on a sound-level meter best approximates the frequency response of the human ear (dBA).
The hourly equivalent sound level, $L_{Aeq\ 1h,}$ represents the A-weighted sound level which contains the same amount of acoustic energy as the actual time-varying, A-weighted sound level over one hour.

Source: 23 CFR 772

Noise measurements were taken at potentially impacted areas within the project area. The NAC land use categories that are found within or adjacent to the project area are Categories B (residences) and C (commercial businesses). FHWA noise abatement guidelines state that abatement strategies should be considered when the noise levels "approach," or exceed 67 dBA for a Category B land use, or 72 dBA for a Category C land use. The "approach" threshold as defined by ADOT is 3 dBA. Therefore, 64 dBA is considered "approach" for a Category B land use, and 69 dBA for a Category C land use, respectively. These guidelines also state that noise abatement should be considered when the noise levels "substantially exceed the existing noise levels." This criterion, as defined by ADOT, is the increase of 15 dBA or more above existing conditions. ADOT's policy does not provide for mitigation of commercial sites.



Source: AASHTO Guide on Evaluation and Abatement of Traffic Noise, 1993

Figure 14. Common Noise Levels

Existing noise levels were measured at nine receptor sites (R-1 through R-9) within or adjacent to the project area (refer to Table 12). Existing noise levels were modeled using traffic conditions including 30 miles per hour (mph) along 55th Avenue, 35 mph on Maryland Avenue, and 40 mph on Grand Avenue. These speeds were based on observations cited in the traffic study completed by ADOT (ADOT 2001). Additionally, because these speeds would likely increase with any improvements as a result of reduced congestion and increased capacity, traffic speeds were increased by 5 mph in the noise modeling for Alternative N-2b.

Table 12. Summary of Noise Analysis

Receptor Site	NAC	Receiver Description	Existing	No Build	Alternative N-2b	Mitigation
			Peak 2000 (dBA)	Peak 2025 (dBA)	Unmitigated/ Mitigated (dBA)	
1	B	Single Family (SF) Residence at 54th Avenue	57	57	63/60	None
2	B	SF Residence at 54th Avenue	59	59	[1]**65**/61	Barrier B-3
3	B	SF Residence at 54th Avenue	61	61	**68**/62	Barrier B-3
4	B	SF Residence at 53rd Drive	58	58	**64**/60	Barrier B-2/3
5	B	SF Residence at 53rd Drive	59	59	**65**/61	Barrier B-2
6	B	SF Residence at 53rd Drive	61	61	**67**/63	Barrier B-2
7	B	SF Residence at 53rd Drive	63	63	**69**/63	Barrier B-2
8	B	Cholla Apartments at 53rd Drive	60	60	**66**/62	Barrier B-1
9	C	Glendale Post Office at 55th Avenue	59	59	61/60	None

Source: ADOT 2001. [1] Bold Numbers indicate those receptor sites above the 64-dBA threshold for Category B land uses.

Short-term noise increases could be experienced at local residences during construction under the proposed improvements identified in Alternative N-2b. These increases are due to the typical equipment used during large construction-related projects. Additionally, the quantification of such impacts is difficult to analyze without adequate data on the project's exact schedule and a detailed list of equipment. Site clearing may involve an approximated temporary dBA of 88 from either the operation of dozers and/or backhoes. Grading/earthwork activities that involve either graders or belly scrapers may temporarily increase noise levels to 93 dBA.

Alternative N-2b would impact sites R-2, R-3, R-4, R-5, R-6, R-7, and R-8 (refer to Table 12). The noise modeling for the seven impacted receptors indicate a sound barrier could be used to mitigate dBA levels below the 64-dBA threshold. Three sound barrier alternatives (B-1, B-2, and B-3) were evaluated in the noise study report (ADOT 2001). Barrier recommendations provide an insertion loss,

which is essentially the reduction of noise levels at any given site, ranging between 4 and 6 dBA (refer to Table 12 and Figure 15).

Sound Barrier 1 (B-1) would be constructed 8-feet high beginning at 53rd Drive for approximately 200 feet in length east along the ROW/property line of Maryland Avenue (refer to Table 13 and Figure 15). The barrier would achieve an insertion loss of 4 dBA at R-8 with an approximate cost of 33,600 dollars per benefited receiver.

A second barrier alternative, B-2, is proposed to be located along the ROW/property line of Maryland Avenue between 53rd Drive and the alley located just east of 54th Avenue (refer to Table 13 and Figure 15). The barrier would be constructed 11-feet high and 135 feet in length. This barrier alternative would achieve between a 4- and 6-dBA insertion loss and provide a reduction to 63 dBA at R-6 and R-7, and a reduction to 61 dBA at R-5. The cost per benefited receiver would be approximately 31,100 dollars.

To provide additional mitigation to three receptor sites (R-2, R-3, and R-4), a third barrier alternative, B-3, was evaluated in the noise study report. Sound Barrier B-3 is a westerly extension of B-2, but would not be directly connected because of the alley located in between 53rd Drive and 54th Avenue. The barrier would be located along Maryland Avenue for approximately 200 feet and would then wrap to the north along the 54th Avenue ROW (refer to Table 13 and Figure 15). The barrier would be 8-feet high and approximately 300 feet in length. Even with the gap between B-2 and B-3, B-3 would still provide a 4 dBA insertion loss. Sound Barrier B-3 would cost approximately 50,400 dollars per benefited receiver.

Table 13. Summary of Recommendations for Noise Mitigation

Barrier	Receptors	[1]Benefited Receivers	Barrier Dimensions			Total Cost Per Benefited Residence	Comment
			Linear feet	Height (feet)	Area (square feet)		
B-1	R-8	None	200	8	1600	$33,600	Provides 4 dBA insertion loss.
B-2	R-5, R-6, R-7	R-7	135	11	1485	$31,185	Provides 4 to 6 dBA insertion loss.
B-3	R-2, R-3, R-4	R-3	300	8	2400	$50,400	Provides 4 to 6 dBA insertion loss.

Source: ADOT 2001. [1] Benefited Receivers include only those receptors that would be benefited by an insertion loss of 5 decibels.

Alternative N-2b would impact seven receptor sites adjacent to the project area. Receptor sites R-1 through R-8 indicate a 6- to 7-dBA increase over the existing dBA levels. Under the No Build Alternative in 2025, no receptor sites would meet or exceed the NAC. To mitigate for these impacts,

Key

◉1 Noise Receptor Location

B-1 Potential Sound Barrier Location

Mile

0.0 0.5 1.0

Figure 15. Noise Receptors and Potential Sound Barrier Locations

NORTH

ADOT would construct an eight-foot high sound barrier as identified in Sound Barrier Alternatives B-1, B-2, or B-3 or a combination of these alternative recommendations. ADOT would coordinate with the City of Glendale and evaluate final specifications and design criteria prior to 95 percent final design. Although impacts would occur to the local noise quality, these impacts would be mitigated in accordance with ADOT's Noise Abatement Policy. Therefore, the proposed project would not substantially impact the noise levels of the project area.

I. Visual Resources

In general, the visual character within the project area is dominated by older commercial and industrial land uses, as well as scattered residences typical of the Grand Avenue corridor. Prominent existing features within the project area include residential, commercial, and industrial development; the BNSF tracks; traffic lights; street lighting; and billboards. These commercial and industrial buildings are constructed with a variety of materials and painted a variety of colors. In addition, there is a limited amount of landscaping at these commercial and industrial businesses. Distant views of mountains can be seen from portions of the project area, although the development in the immediate area limits expansive views. Some of the most distinct views from portions of the project area include the Estrella Mountains to the south and the White Tank Mountains to the west.

The construction of the elevated grade-separation structure as identified with Alternative N-2b and associated service road improvements would create a notable change to the visual character and quality of the project area. The grade-separation structure would be highly visible to motorists and to the adjacent residential and commercial areas, because it would be constructed approximately 40 feet above the ground at its highest point. Because of the limited amount of plant material within the project area, the addition of landscaping on the embankments of the grade-separation structure and detention basins would improve the overall visual quality. The result of these landscape enhancements and improved traffic facilities could revitalize the neighborhoods, improving future resale values. Overall, the proposed improvements would substantially change the visual quality and character of the project area because of the contrast in the scale and size of the elevated grade-separation structure with the existing setting and the presence of landscape enhancements.

Because of the improvements to the existing older traffic facilities and the addition of landscaping on embankments and detention basins, the overall visual quality of the project area would be improved. However, the visual character would be notably changed due to these same modern improvements. Therefore, the Preferred Alternative improvements would beneficially change the visual quality, with

the project improvements contrasting in terms of scale and size with the visual character of the existing setting.

All embankment slopes, detention basins, and affected public ROW would be landscaped with drought tolerant plants and the area would be covered with an inert ground cover. Trees would be planted along detention basins to screen the drainage facilities from motorists' views.

J. Invasive Species

Under Executive Order 13112 dated February 3, 1999, projects which occur on federal lands or are federally funded must "subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; and (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded."

In accordance with Executive Order 13112, the project area was surveyed by a qualified invasive weed authority, and it was determined that there are no listed invasive species within the project boundaries.

The proposed project would not result in the spread of invasive species because none were identified within the project area. The existing ROW has been previously cleared of native vegetation for the construction of the respective roads; residential uses; and the commercial, farmland, and industrial development within the proposed project area and surrounding area. Alternative N-2b would require approximately 12 acres of ROW for the construction of the proposed improvements. The area required to construct the proposed improvements would be cleared and grubbed. This project would not result in the spread of any invasive species or impacts to any known populations of invasive species from the construction of Alternative N-2b. Therefore, Alternative N-2b would not contribute to the spread of invasive species.

In order to prevent the introduction of invasive species, all earth-moving and hauling equipment would be washed prior to arriving on site to prevent the introduction of invasive species seed. In compliance with Executive Order 13112 regarding invasive species, all disturbed soils that would not be landscaped or otherwise permanently stabilized by construction would be seeded using species native to the project vicinity. Furthermore, all embankment slopes, detention basins, and affected

public right-of-way would be landscaped with drought tolerant plants and the area covered with an inert ground cover. Trees would be planted along detention basins to screen the facilities from motorists' views.

K. Water Resources Considerations

Surface water in the form of storm water currently flows along the streets within the project area, into storm water drain systems, where provided, and otherwise occurs as sheet flow across the existing parcels in a southerly pattern.

Alternative N-2b would require on-site detention basins to contain the increased volume of storm water within the project area that could potentially occur as a result of the introduction of paved surfaces and the construction of embankments using fill material for the grade-separation overpass. The two basins would be designed to contain run-off for a minimum of a 10-year storm event. Roadway curbs would be designed to allow rainfall to drain off the roadway surface. Drainage facilities would be designed in accordance with ADOT's policies and standards. These facilities would, at a minimum, contain run-off or potential ponding that could occur as a result of embankments or additional pavement surfaces.

Because 5 or more acres of land would be disturbed, a National Pollutant Discharge Elimination System (NPDES) permit would be required. The Storm Water Pollution Prevention Plan (SWPPP) would be prepared during final design. The ADOT District Construction Office and contractor would submit the Notice of Intent (NOI) and the Notice of Termination (NOT) to the U.S. Environmental Protection Agency (EPA) and copies to Arizona Department of Environmental Quality (ADEQ). A NOI would be submitted to the EPA at least 48 hours prior to the start of construction.

During construction, care would be taken to ensure that construction materials would comply in accordance with *Arizona Department of Transportation Standard Specifications for Road and Bridge Construction Section 104.09* (2000 edition). Excess concrete, curing agents, formwork, loose embankment materials, and fuel would not be disposed of within the project boundaries.

The proposed improvements would not substantially impact the existing surface water flow patterns and would, at a minimum, contain run-off that could occur as a result of embankments or additional roadway surfaces. Because 5 or more acres of land would be disturbed, a NPDES permit would be required and a SWPPP would be prepared by the final roadway designer prior to the start of

construction. Therefore, no substantial impacts on surface water flow or water quality within the project area would be anticipated as a result of the construction of the proposed improvements.

L. Hazardous Materials

A Preliminary Initial Site Assessment (PISA) was conducted by ADOT EPG for the presence of hazardous materials within the project area. The assessment included a field reconnaissance, review of applicable federal and state agency records, and a review of aerial photographs. The PISA indicated that five parcels would require a Phase I Site Assessment prior to ROW acquisition. A Phase I Site Assessment is the industry standard to meet the "due diligence" requirements of the Comprehensive Environmental Response, Compensation, and Liability Act. Requirements for Phase I reports are defined in American Society for Testing and Material's report *E1527-00 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. No other hazardous materials concerns were identified during this investigation.

A Phase I Site Assessment was conducted in May and June of 2002. The assessment resulted in 1) sampling of stained soils at one parcel, 2) subsurface assessment at a second parcel, 3) recommendations for the clean up of petroleum stained soils at a third parcel, and 4) no further assessment required at the remaining two parcels. The results of the Phase I Site Assessment for hazardous materials would be evaluated by ADOT EPG and mitigated prior to construction. Because the proposed project would involve the cleanup of hazardous materials, the construction of Alternative N-2b would be beneficial.

According to *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction*, Section 107 Legal Relations and Responsibility to Public (2000 Edition) (Stored Specification 107HAZMT, 01/15/93), if previously unidentified or suspected hazardous materials are encountered during construction, work would cease at that location and the ADOT Engineer would be contacted to arrange for proper assessment, treatment, or disposal of those materials. Such locations would be investigated and proper action implemented prior to the continuation of work in that location.

M. Utilities

The project area includes the following utilities: Arizona Public Service (APS) Power, Southwest Gas, Qwest, Salt River Project (SRP) Irrigation, MCI Worldcom, Electric Lightwave, Cox Communications, and the City of Glendale storm and sanitary sewer.

The APS power lines as well as the Electric Lightwave lines that follow along the western alignment of Grand Avenue would need to be raised to accommodate the proposed overpass structure in Alternative N-2b. Alternative N-2b would require relocating approximately 500 feet of a 12-kV power line along the north side of Maryland Avenue between 54th Avenue and 53rd Drive. In addition, Alternative N-2b would require the relocation of the Sky-Tel Communications tower located between 55th and 54th Avenues and SRP Irrigation facilities would be impacted. Alternative N-2b could also require the relocation of a 24-inch SRP irrigation pipe between 55th Avenue and 53rd Drive.

The proposed improvements for Alternatives N-2b would not substantially impact any utilities or customers of these utilities because most of the relocations would involve either minor alterations to utilities such as raising power lines or would impact nonessential utility facilities such as the Sky-Tel Communications tower. Utilities would be relocated by either the utility company itself, or would be completed by the contractor as a phase of the construction efforts. Because most of the utility relocations would occur prior to project construction as a separate phase and no disruption of service is anticipated during construction, Alternative N-2b would not substantially impact project-area utilities. Furthermore, the ADOT District Construction Office would provide notice to utility companies prior to any disruption of service.

N. Material Sources and Waste Materials

Specific details regarding the quantity of materials needed for construction of embankment slopes or other project-related embankments and the availability or status of clearance of material source sites would be evaluated during final design.

Excess waste material and construction debris would be disposed of at sites supplied by the contractor in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction* Section 107.11, Protection and Restoration of Property and Landscape (2000 Edition). Disposal would be made at either municipal landfills approved under Title D of the Resource Conservation and Recovery Act, construction debris landfills approved under Article 3 of the Arizona Revised Statutes 49-241 (Aquifer Protection Permit) administered by the ADEQ, or inert landfills.

During construction, the contractor would give special attention to the effect of its operations upon the landscape in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction,* Section 104.09 (2000 Edition) and the Water Quality Standards in

Title 18, Chapter 11 of the Arizona Administrative Code as administered by the Arizona Department of Environmental Quality.

Any material sources required for this project outside of the project area would be examined for environmental effects by the contractor, prior to use, through a separate environmental analysis in accordance with *Arizona Department of Transportation's Standard Specifications for Road and Bridge Construction,* Section 1001 Material Sources (2000 Edition) (Stored Specification 1001.2 General).

Due to the requirements set forth in the above-mentioned regulations, the proposed project would not create an impact as a result of construction debris disposal.

O. Secondary Effects

Secondary effects are broadly defined by the CEQ, as those impacts that are caused by an action and occur later in time, or are farther removed in distance but are still reasonably foreseeable after the action has been completed (40 CFR 1508.8). They comprise a wide variety of secondary effects such as changes in land use, economic vitality, and population density. Secondary impact issues relevant to this project include access, noise, and visual quality. Secondary land use impacts were not considered because most of the project area has been developed for the last decade or longer, and most nearby vacant parcels would be purchased for the proposed improvements.

1. Multi-Modal Transportation Impacts and Access

If future planned RPTA bus routes are implemented along Maryland Avenue, bus service routes would likely be required to use the proposed service roads to connect passengers to the existing Grand Avenue bus route and any future 55th Avenue bus route. Consequently the future RPTA Yellow Line (Grand Avenue) may no longer function as it does today, and connections to other north-south bus routes, such as any proposed bus routes along 55th Avenue or Maryland Avenue might not be possible. The proposed improvements would allow for the opportunity for an expressway-like bus service from remaining bus stop locations. Therefore, the impacts to regional transit service are anticipated to be minimal.

Specific commercial, retail, and residential marketability may improve within the project area due to the realignment of Maryland Avenue and the construction of new traffic facilities. Access points to the adjacent properties and known future expansion of the existing properties would be provided. Ingress and egress for both local residents and business employees and for non-local motorists seeking access to these sites would be provided.

2. Visual Impacts and Economic Vitality

The proposed grade-separation structure would be visible from the residential area located immediately northeast of the project area. This might to some degree affect future residential marketability, but landscaping would be provided to offset and improve the aesthetic quality of the structure and of the local community. The structure would be constructed of modern design and materials. Conversely, this upgrading of traffic facilities throughout the project area would be an overall improvement to the general visual quality of the project area. These changes could improve the future resale potential of residences and/or businesses along the Grand Avenue corridor.

Parcels in the project vicinity would also benefit from reduced traffic congestion and delay times, and from accessibility changes, which would improve ingress and egress conditions for exporting or importing goods and/or for accessing adjacent neighborhoods. These changes could also improve future values of these properties. Because the actual results of these improvements would not be known until sometime after completion, the overall future economic vitality of the project area is unknown, although impacts are not anticipated to be substantial. Therefore, the proposed project would not substantially impact the visual character or economic vitality of the project area in the future.

P. Cumulative Effects

Cumulative effects are the combined impacts on the environment that result from the incremental effect of the proposed action when added to past, present, and reasonably foreseeable future actions within the immediate vicinity of the project area (40 CFR 1508.7). These impacts are less defined than secondary effects. The cumulative effects of an action may be undetectable when viewed in the context of individual direct or indirect actions, but could add to a measurable environmental change. For this assessment, only those at risk critical resources would be evaluated. These include past actions that have occurred since 1990, and foreseeable future actions based on the best available information from the associated planning agencies. The majority of the development within the project area occurred prior to 1990.

1. Population Growth and Transportation Facility Development

The western part of the Phoenix Metropolitan Area is experiencing ongoing residential, commercial, and industrial development. The result of this growth is more population, employment, and revenue for the state and local jurisdictions and more demand upon the area's transportation facilities. The

population in Arizona has grown steadily over the past 30 years, increasing from 1,775,399 persons in 1970 to 4,961,953 in 2000. Maricopa County's population has grown from 971,228 in 1970 to 2,122,101 according to the 1990 Census. According to the Arizona Department of Economic Security, the 2020 population in Maricopa County is estimated to grow to nearly 4,516,090 people. Transportation improvements contribute to future development site selection. Because Grand Avenue is not the sole arterial street connecting the West Valley, it is unlikely that any proposed improvements to Grand Avenue would greatly increase or contribute to development site selection. Other key links to the West Valley such as I-10, Loop 101, and Loop 303, and any improvements made to these facilities in the future would more likely be contributors that could promote development in the western part of the Phoenix Metropolitan Area.

The most influential future actions associated with this project are the proposed realignments of other intersections along Grand Avenue and any future considerations for expansion or implementation of expressway facilities. ADOT is considering making improvements at a total of eight sites between I-17 and the Loop 101, which include the following:

- 27th Avenue and Thomas Road (under construction)
- 43rd Avenue and Camelback Road (approved for construction)
- 51st Avenue and Bethany Home Road (approved for construction)
- 55th Avenue and Maryland Road (under study)
- 59th Avenue and Glendale Avenue (under study)
- 67th Avenue and Northern Avenue (under study)
- 75th Avenue and Olive Road (under study)
- On-ramps to the Agua Fria Freeway (Loop 101) from 91st Avenue at its intersection with Cactus Road (under construction)

Depending on scheduling of other proposed improvement projects along the Grand Avenue corridor, construction-related traffic impacts could limit or potentially impact the overall function and use of Grand Avenue during these construction projects. Traffic control plans would mandate that all local access to businesses and residential areas be maintained during construction. In addition, projects would be scheduled to limit overlapping and also to limit the overall impacts to the operation and function of the Grand Avenue corridor. Motorists could use other arterial streets such as 55th Avenue and Glendale Avenue. This would require that motorists detour around construction zones and would

create longer travel times and inconvenience to motorists. It is not anticipated that these construction impacts would be substantial because they would be temporary.

It is anticipated that traffic operations on Grand Avenue would be considerably improved after the completion of the eight improvement projects. Current and projected ADT numbers and LOS classifications illustrate that these eight intersections operate at the poorest of traffic operation levels, with substantial delay times up to three minutes. The recommended intersection improvements would not only improve the LOS at each of the proposed project sites, but also would improve community mobility and access throughout the corridor.

Additionally, the Maricopa Association of Governments is beginning the Grand Avenue Northwest Corridor Study to assess improvements to Grand Avenue between the Loop 101 and the Loop 303. This study is an overall effort by MAG in the development of a new Regional Transportation Plan. No further details of this plan were available during the preparation of this document.

Therefore, it is not anticipated that the proposed project would result in any substantial impacts as a result of any known traffic improvement projects or substantially impact population growth in the western part of the Phoenix Metropolitan Area.

2. Natural Environment

The most notable cumulative impacts with respect to the natural environment of the associated Grand Avenue projects are the results of channelizing drainage and detaining storm water. Storm water would be routed to detention basins or existing storm drain facilities. These facilities would be beneficial because they would aid in the area's drainage and potentially alleviate some flooding near the proposed project sites. At a minimum, these drainage improvements would not increase area flooding. The proposed drainage facilities may also provide a link to future area-wide drainage planning being currently evaluated by the Flood Control District of Maricopa County and local jurisdictions. In conclusion, the proposed improvements would not substantially effect the natural environment of the project area.

3. Human Environment

Because of the potential for new development as a result of improved traffic circulation and access through the corridor, the overall social and economic impacts should be positive. However, a number of businesses would be impacted from project-specific ROW acquisitions. These businesses would be afforded relocation, but locations are dependent on individual owner site preferences.

Retail establishments would, as a rule, tend to be more sensitive to the kinds of changes that would occur as a result of the various improvements within the Grand Avenue corridor. Of these, many could be classified as "destination" retail places, in that they deal with either specialized or high-dollar goods, and not convenience or everyday goods, or, they are places with some degree of regional name-recognition. The nature of these retail businesses would therefore tend to minimize losses of business activity due to relocations or to disruptions and changes to business access.

The potential effects that apply to the wholesale and manufacturing businesses are primarily a matter of changes in access. Temporary access restrictions and/or detours could be necessary during construction, although access to businesses and nearby residences would be maintained. Permanent changes to routing of traffic would occur as a result of grade-separating one leg at each of the respective intersections throughout the Grand Avenue corridor. However, in most cases less than one mile of "out-of-direction travel" would be required. Although because of substantial improvements to each respective intersection LOS, travel times along these alternative routes would not be substantially different than what occurs throughout the corridor today.

Several businesses could be affected during construction from typical traffic-related delays and, as a result, driver avoidance. A traffic plan would be implemented to address traffic-related construction issues for the remaining businesses that are not acquired. Impacts would not be anticipated to be substantial because customers would still be provided access during construction. In addition, even though permanent access changes would occur, creating some out-of-direction travel, these impacts would not be expected to be substantial. Traffic control plans would be established in accordance with Part VI of the *Manual on Uniform Traffic Control Devices for Streets and Highways*, published by the U.S. Department of Transportation, FHWA (2000) and ADOT's Traffic Control Supplement (1996).

As a result of anticipated operational improvement and functionality of the Grand Avenue corridor, new development along the corridor may be encouraged. The shifting of roadway alignments would provide new opportunities at sites currently undeveloped, such as the agricultural land designated for

future industrial use along the 91st Avenue on-ramp project. These proposed alignment changes could promote improvements or expansion of existing commercial and retail developments, because better traffic operations could encourage additional patronage to the corridor. Therefore, the cumulative impacts of these eight projects may improve or promote the development of nearby vacant land, and encourage improvements to existing land uses within the Grand Avenue corridor while potentially improving the overall community character.

The RPTA bus line along Grand Avenue, the Yellow Line, would be altered with the completion of these grade-separation structures. The grade-separation structures may permanently disconnect portions of Grand Avenue from other RPTA bus lines. As a result, the RPTA Yellow Line may no longer function as it does today. A potential change that could benefit some of the bus users is that expressway-like bus service (e.g., fewer stops with portions of Grand Avenue's bus service being disconnected from other connecting routes) would be possible. This could result in some commuters shifting from individual vehicle use to bus service, reducing congestion on Grand Avenue. Therefore, the proposed improvements throughout the Grand Avenue corridor would impact transit service. ADOT would coordinate with RPTA to address impacts and/or relocation of any temporarily or permanently impacted bus stops or bus routes during final design.

The visual quality of the existing Grand Avenue corridor is characterized by older commercial and industrial buildings along major urban streets carrying high traffic volumes, which are common throughout this segment of the corridor. Some of these existing developments would be acquired during ROW proceedings for the proposed realignment of the various intersections. The overall visual quality may be improved by the improvements made to parcels of lands where portions of these older commercial and/or industrial buildings occur and by landscaping embankment and detention basins. New developments could potentially be constructed adjacent to these new roadway alignments or additions could be made to existing commercial or industrial facilities. Therefore, the cumulative impacts on the visual quality of the Grand Avenue corridor are anticipated to create a positive change.

V. PUBLIC INVOLVEMENT/PROJECT COORDINATION

A. Agency and Stakeholder Coordination

Coordination letters were sent to the following agencies and stakeholders:

Arizona Department of Public Safety

Burlington Northern Santa Fe Railway

City of Glendale

City of Peoria

City of Phoenix

Cox Communications

Flood Control District of Maricopa County

Glendale Elementary School District

Glendale Union School District

Maricopa Association of Governments

Maricopa County

Maricopa County Department of Transportation

Qwest

Regional Public Transportation Authority

Salt River Project

Southwest Gas Company

An agency coordination meeting was held on July 12, 2000, at the Glendale City Hall, located at 5850 West Glendale Avenue, Glendale, Arizona. The meeting was held in conjunction with the Grand Avenue (US 60) at 59th Avenue and Glendale Avenue project. The meeting included a brief project introduction and overview of the 55th Avenue project as well as the 59th Avenue project. Issues and/or comments received during this meeting included the following: adherence to MAG's long range plans, provision of adequate public involvement; accommodation of additional traffic capacity of Maryland Avenue, consideration of disconnecting 55th Avenue to improve train traffic, and identification of the schedule of Grand Avenue corridor projects.

Coordination letter responses received during the project scoping process included a response from the MAG, Cox Communications, and Maricopa County. Both MAG and Cox Communications stated

that neither party had comments or concerns at this time. Maricopa County provided contact information for applicable earthmoving permits and abandonment or reconstruction of water or sewer lines within any unincorporated areas.

B. Public Involvement

A Public Involvement Plan (PIP) was prepared for the Maryland Avenue Overpass at Grand Avenue (US 60) and 55th Avenue Design Concept Study and EA, as well as the 59th Avenue project intersection. This plan depicted the strategy to obtain involvement from the public as well as interested groups and organizations such as the local neighborhood associations. In addition, the plan developed a strategy for notifying the public including placing meeting advertisements in the newspaper(s), distributing door hangers, preparing Spanish as well as English text, direct mailings, and placement of notification on the City of Glendale's website at their request. The PIP was approved by ADOT and presented to the City of Glendale City Council.

A project-related web site was developed that included engineering details, environmental documents, project team member contact information, and a forum for both notification of upcoming public meetings and a place to download comment forms for these public meetings. The site includes information on all eight Grand Avenue projects. For further information on this site, please visit www.grandavenuecorridor.com.

Two public meetings have been held for the Maryland Avenue Overpass at Grand Avenue (US 60) and 55th Avenue Design Concept Study and EA. These public meetings included the presentation of detailed engineering drawings and descriptions and the solicitation of public comments on these proposed configurations to be reviewed by ADOT. Both meetings were held in conjunction with the 59th Avenue at Grand Avenue and Glendale Avenue project. The presentation given by project team members as well as meeting handouts were separated to insure that questions and/or comments could be distinguished for each set of alternatives at the respective intersections. The meetings were held to present the proposed project alternatives and to obtain public input regarding the social, economic, environmental, and design issues for the project.

The first public meeting was held at the Isaac E. Imes Magnet School Gymnasium on November 2, 2000, from 6:00 p.m. to 8:00 p.m. A total of approximately 120 people attended the meeting. Notice of the public meeting was placed in the *Arizona Republic* and the *Glendale Daily Star* on October 26, 2000, and again on November 2, 2000. In addition, a notice was placed in the Prospector on October 27, 2000, and on the ADOT EPG Website. Door hangers both in English and Spanish were

also distributed within a one-mile radius from the intersection of 55th Avenue, Maryland Avenue, and Grand Avenue. Comments noted at the meeting or received after the meeting included concerns about causing a further division of the neighborhoods northeast and southwest of Grand Avenue, suggesting that 55th Avenue be constructed as the overpass instead of Maryland Avenue, maintenance of bicycle access across the overpass structure, the lack of median barriers on the proposed bridge and approaches carrying Maryland Avenue over Grand Avenue and the BNSF, concerns regarding access to the post office, and the visual appearance of the structure after completion.

The second public meeting was held at the Glendale Civic Center on Thursday, November 1, 2001, from 6:00 p.m. to 8:00 p.m. A total of 28 people attended the meeting. Notice of this public meeting was placed in the *Arizona Republic* on October 18, 2001, and again on October 25, 2001, and on the ADOT EPG and Grand Avenue project Websites. In addition to the newspaper notices, approximately 14,000 doorhangers were distributed for this project. These doorhangers were prepared in both Spanish and English text.

Comments received from the public meeting included a request to clarify the interaction between the Grand Avenue projects and the City of Glendale's future light rail system and support of Alternative S-2 because Alternative N-2b is too complicated for traffic circulation. In addition, a concern about creating a greater barrier between the northeast and southwest portions of the Grand Avenue corridor and the evaluation of 55th Avenue as the overpass were made similar to the October 2000 public meeting. Lastly, two comments were taken that support Alternative N-2b because it does not disturb Sands Motor Company.

A public hearing will be held to provide the public the opportunity to comment on the Draft EA. A copy of the public hearing notice is included in the Appendix D.

VI. CONCLUSION

The potential environmental impacts of the proposed improvements were evaluated based on both the context of the effects on the project area and the intensity or severity of impacts as defined in CEQ's regulations. Table 14 summarizes the potential environmental impacts of the proposed project actions.

Table 14. Results of Environmental Analysis

Environmental Consideration	Result of Alternative Evaluation
Ownership, Jurisdiction, and Land Use	No substantial impact
Farmland	No substantial impact
Social and Economic Resources	No substantial impact
Title VI/Environmental Justice	No substantial impact
Cultural Resources	No impact
Section 4(f) of the Transportation Act	No impact
Air Quality Analysis	No impact
Noise Analysis	No substantial impact
Visual Resources	No substantial impact
Invasive Species	No impact
Water Resources Considerations	No substantial impact
Hazardous Materials	Beneficial impact
Utilities	No substantial impact
Material Sources and Waste Materials	No impact
Secondary Impacts	No substantial impact
Cumulative Impacts	No substantial impact

VII. PROJECT PREPARERS AND CONTRIBUTORS

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